County of Loudoun

Office of Transportation Services

MEMORANDUM

DATE: April 27, 2009

TO: Judi Birkitt, Project Manager, Planning Department

FROM: Shaheer Assad, Senior Transportation Engineer/Planner

SUBJECT: ZMAP 2008-0021, Kincora Village Center
First Referral

Background

The applicant, NA Dulles Real Estate Investor LLC is seeking to construct 1,400 multi-family residential units; 4,000,000 square feet of office use, 720 hotel rooms including hotel/conference center uses; 500,000 square feet of support retail and a performing arts center. The proposed development will be constructed in the southwest and northwest quadrants of the Nokes Boulevard and Sully Road (Route 28) interchange. Approximately 24% of the proposed total site will be built in the first phase (2011), 18% will be developed in the second phase (2015) and 58% by the full build-out year (2025). Please see Attachment 1, Project Vicinity Map. The site is currently zoned for PD-IP industrial park (under the 1972 Zoning Ordinance) and FOD (Floodplain Overlay District). Access to the proposed site will be provided along the future Pacific Boulevard, the Nokes Boulevard/Route 28 interchange, and from Gloucester Parkway. Please see attachment 1.

The applicant has also submitted a special exception application to permit a recreational facility (baseball stadium), office, and auxiliary uses on 60.27 acres on the Kincora property which is currently under review. The total development for the first phase is approximately 1,160,000 square feet of commercial uses.

OTS reviewed materials received from the Department of Planning, dated November 7, including a traffic impact study prepared by Grove/Slade Associates, dated October 23, 2008; a rezoning plan set prepared by Urban Engineering dated October 2008; a draft of Proffers dated February 5, 2009; and a statement of justification dated October 31, 2008.

ATTACHMENT 1

Based on the County's request, the traffic study analyzed the roadway improvements required to accommodate the existing 2008, future 2011, future 2015, future 2025 and future 2030 traffic conditions.

Finally, the applicant has submitted a request asking the Board of Supervisors (BOS) to create a Community Development Authority (CDA). If the BOS approves the CDA, the owner shall dedicate a right-of-way to the County or VDOT for the ultimate conditions of road improvements (including segments of Gloucester Parkway and Pacific Boulevard/Russell Branch Parkway) with the funding to be provided by the CDA. The transportation improvements would be implemented within 3 years of the date the CDA is created by the BOS. Without the CDA improvements would be phased in over the build out of the project.

Existing, Planned, and Programmed Roads

There are currently no public roads directly serving the site and no public funds or private sector proffers dedicated to expanding Pacific Boulevard to its ultimate four lanes at the vicinity of the site. The interchange of Nokes Boulevard/Route 28 will open in phases beginning May 2009 with full operation expected in Sept. 2009. The traffic study includes 23 intersections located in the vicinity of the proposed site. The following main roads are either existing or are planned facilities serving the subject site:

Route 7: The existing condition of Route 7 in the vicinity of this site is a six-lane/200 foot Right of Way (ROW), median divided, principal arterial with controlled access. Left and right turn lanes are required at all intersections. Design speed and median crossover spacing are variable. The Countywide Transportation Plan (CTP) states that bicycle/pedestrian facilities must be considered in the road's design and may require additional ROW. The traffic impact study indicates that Route 7 will be required to be widened to eight lanes and have grade separated interchanges in order to handle 2025 forecasted traffic.

Route 28: Route 28 (Sully Road) is a principal arterial, six-lane, median-divided, controlled access road with grade-separated interchanges that have been constructed at Route 625, Route 606, and Sterling Boulevard. In the vicinity of the site, the interchange of Nokes Boulevard and Route 28 is under construction and is scheduled for completion in Sept. 2009. Ultimately Route 28, as shown on the Countywide Transportation Plan (CTP), is planned to be an 8-lane, limited access freeway.

Pacific Boulevard: In the CTP, Pacific Boulevard in this vicinity is planned to be a 4-lane, undivided road in a 70-foot right-of-way and would traverse the eastern edge of the site. This portion of Pacific Boulevard is yet to be constructed. The CTP states that bicycle/pedestrian facilities must be considered in the design and may require additional ROW.

Gloucester Parkway: Gloucester Parkway section is also planned to traverse the site, extending west from Nokes Boulevard. This portion of Gloucester Parkway is also yet to be constructed. The functional classification for Gloucester Parkway is a Major Collector. The ultimate condition for Gloucester Parkway is a U6M, controlled access, median-divided, urban collector with a grade-separated interchange at Route 28. Left- and right-turn lanes are required at all intersections. A forty-five (45) mph design speed and desirable median crossover spacing of 800 feet are also required. The six-lane road requires a 120-foot ROW, plus land dedication for turn lanes at intersections. Bicycle/ pedestrian facilities must be considered in the design and may require additional ROW.

Loudoun County Parkway: Loudoun County Parkway has been completed between Route 7 and Route 625. It is a 4-lane, median divided, controlled access, minor arterial with left and right turn lanes at all intersections. The ultimate CTP plan for Loudoun County Parkway is a U6M section in a 120-foot right-of-way. The CTP states that bicycle/pedestrian facilities must be considered in the design and may require additional ROW.

Waxpool Road: The site is located north of Waxpool Road (Route 625), currently a 4-lane, median divided, major collector road. The CTP calls for the ultimate condition for this segment of Route 625 to be a limited access, median-divided, 6-lane road with a minimum 120-feet right-of-way, plus land dedication required for left and right turn lanes. The design speed is 45 mph and the desirable median crossover is 700 feet.

Existing and Forecasted Traffic Volumes and Level of Service

The traffic study includes information related to capacity analysis that was performed at the intersections within the study area. The traffic study includes evaluation measures for the existing conditions of the year 2008. Analyses were performed at intersections and roadway capacity during the peak hours on the weekday as well as Saturday. The analysis indicates that most of these intersections would operate at unacceptable levels of service under the existing conditions of the year 2008. It is indicated that the connection of Pacific Boulevard to Russell Branch and Gloucester Parkway to Loudoun County Parkway will improve the levels of service significantly.

The traffic study recommends that Route 7 and Route 28 corridors be widened to eight lanes in addition to having grade-separated interchanges on these corridors within the vicinity of the site. The recommendation appears to be inconsistent with the current CTP, since Route 7 is on the plan as a 6-lane roadway. For example, it will be very difficult to assume that Route 7 will become eight lanes and in fact, the right-of-way will not be available on certain segments of Route 7. The traffic study assumes transportation improvements for nearby proposed sites for the background 2011 traffic conditions. However, the traffic study did not include who will do these improvements.

The traffic study shows the site trip generation calculation for years 2011, 2015, 2025 of the proposed plan using the Institute of Transportation Engineers (ITE), Trip Generation, 7th Edition. Please see the attachment numbers 5, 6, and 7 respectively. Trip generation reductions were considered for the internal trips, the pass by trips, and the mode split reduction. The attached tables show the difference between the currently designated development trips in the County's Revised General Plan and the proposed development program. At the full build-out in the year 2025, the site will generate approximately 5,898 vehicle trips during the AM peak hour, 7,355 vehicle trips during the PM peak hour, and approximately 71,520 average daily trips. Attachment 6 shows a trip comparison between the approved use and the proposed site trip generation (phase III-2025). Trips would increase by 23% during the AM peak hour, increase by 49% during the PM peak hour and increase by 70% for the average daily trips.

The level of service analysis was performed at the existing and planned intersections during the AM and PM peak for all the phases (2011), (2015), (2025) and build-out plus 5 years (2030).

The traffic study shows that trip distribution for this application was based on local and regional travel. It is indicated that 50% will use Route 7, 15% of the site's traffic will use Route 28, 10% will use Loudoun County Parkway to come to the site and 25% will use other collector Roads.

Transportation Comments and Recommendations

1. The applicant has provided a traffic study in support of the rezoning application that seems to combine trip generation resulting from both the rezoning land uses as well as the special exception uses. OTS notes that approval of the special exception, a separate application is not guaranteed and therefore the trip generation presented thus represents a worst-case scenario. Has OTS interpreted this assumption correctly? Also, there appears to be a discrepancy between this study and the special exception only traffic study with respect to the magnitude of proposed uses (office park) for the special exception. Please clarify.

2. The applicant has made numerous assumptions regarding recommended/anticipated improvements to be in place in the various phases of the project. OTS believes that many of these assumptions are unrealistic given OTS' understanding of funding levels and profferrd/planned improvements. OTS requests a meeting with the applicant's traffic consultant to discuss the matter before providing further comment on the analysis results.

3. The applicant has provided trip generation figures for each phase of the project as part of the traffic study. In each case, the study indicates that the figures represent new trips generated by the proposed development program for that point in time. OTS believes that the trip generation shown for each phase is actually cumulative (i.e. phase II = phase I + phase II). Is this correct? Please clarify.

4. The interchange of Route 28/Nokes Boulevard is under construction to be a full cloverleaf interchange. The interchange of Route 28/Nokes Blvd will open in phases beginning May 2009 with full operation expected in September 2009. If not provided through the applicant's special exception application, the applicant should dedicate adequate right-of-way at no cost for the purpose of construction of the interchange and a section of Gloucester Parkway that is also being constructed from Route 28 to Pacific Boulevard as a part of the Route 28/Nokes Boulevard interchange project.

5. The traffic study assumes a 10% reduction for transit service. The applicant will be responsible for providing transit facilities equal to the 10% anticipated traffic reduction; in other words, the applicant should show how the traffic impact would be reduced on the adjacent roads. In terms of transit, what mitigation measures will this applicant provide to ensure the 10% reduction in trips in the vicinity of the site? Please describe.

6. The applicant has included trip reductions for internal capture. Please provide appropriate justification/documentation for these reductions. The internal capture reductions should be confirmed with VDOT.

7. The traffic impact study assumes 25% - 40% as pass-by trip reductions for the proposed development in 2015. No pass-by trip reduction should be proposed for trips on Pacific Boulevard as long as Pacific Boulevard is not connected to Russell Branch. Even if a trip reduction were allowed on Pacific Boulevard, it would not apply to ingress or egress volumes at the site entrances. The assumption of pass-by reduction should be confirmed with VDOT. In a meeting with the applicant dated April 4, 2009, the applicant indicated that the 25% pass-by trip reduction was eliminated during the Phase 1 for the SPEX. The applicant may need to clarify that in the addendum taking in consideration that 25% pass-by reduction is a high reduction number even after the connection of Pacific Boulevard.

8. Given the size of the proposed development, a significant contribution towards regional transit facilities is anticipated. Further discussion with the applicant with respect to the nature of the contribution is necessary.

9. The Loudoun County Bicycle and Pedestrian Mobility Master Plan adopted October 20, 2003 and the CTP adopted on July 23, 2001 include policies for Pedestrian and Bicycle Facilities. The Loudoun County Bike and Pedestrian Mobility Master Plan calls for the construction of a multi-purpose trail along Pacific Blvd and Gloucester Parkway. The applicant should construct these trails and may be required to dedicate additional ROW in order to do so. In order for VDOT to maintain a trail, the trail must be built within the public right-of-way; otherwise, it is the responsibility of the applicant to maintain the trail. To ensure the safety of bicyclists and motorists all bicycle facilities must be designed according to AASHTO standards. These standards are documented in A Guide for the Development of Bicycle Facilities, AASHTO, 1999, and may be obtained through AASHTO's website www.aashto.org. Per these standards, multi-use trails should be constructed with a 10-foot paved travel-way with 2-foot graded shoulders on both sides of the trail.

10. The applicant should provide a link level of service and queuing analysis for the proposed typical sections along the frontage of Pacific Boulevard.

11. The site plan shows that most of the internal roads are private roads; therefore, they should comply with the Loudoun County Facility Manual. The public roads should be compatible with VDOT standards.

12. The applicant should construct sidewalks on both sides of the internal roads. The Owner's Association (OA) will maintain all sidewalks and trails, other than those located on public ROW.

13. OTS will provide a review of the draft proffers once we have had a chance to evaluate the revised traffic analysis.

Conclusion

Further discussion with the applicant's traffic consultant is required. OTS will have additional comments upon receipt of the applicant's revised traffic study.

cc: Terrie Laycock, Director, OTS
Andrew Beacher, Assistance Director, OTS
Nancy Gourley, Transit Operations Chief, OTS

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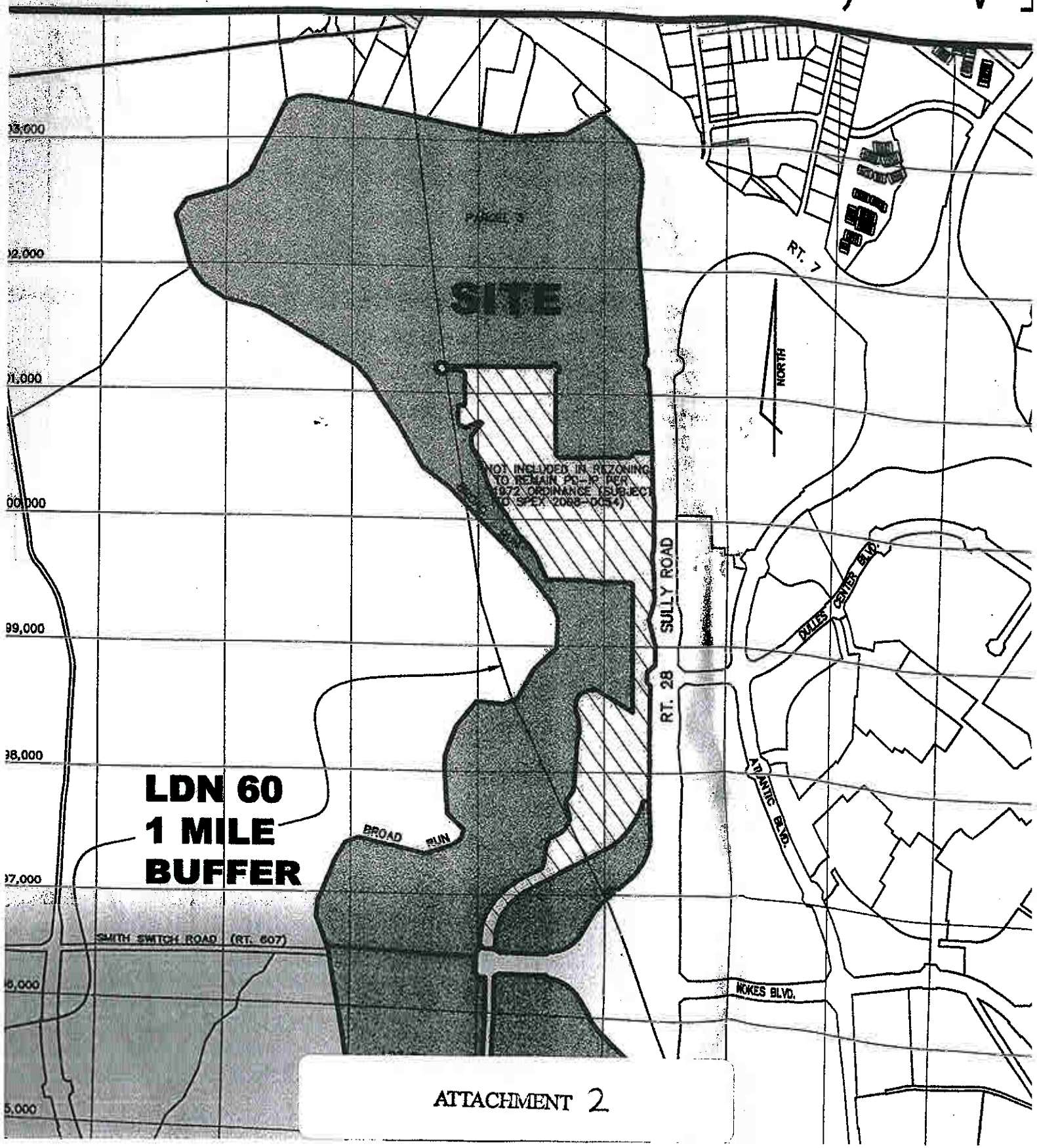


ATTACHMENT 2

MEMORANDUM OF AGREEMENT
BETWEEN NA DULLES REAL ESTATE INVESTOR, LLC, THE VIRGINIA STATE HISTORIC PRESERVATION OFFICE, AND THE NORFOLK DISTRICT, CORPS OF ENGINEERS RELATIVE TO THE KINCORA PROJECT
IN LOUDOUN COUNTY, VIRGINIA
June 4, 2008

WHEREAS, NA Dulles Real Estate Investor, LLC (Permittee) proposes to construct a circa 424 acre mixed use development, known as Kincora, located in Loudoun County, Virginia; and

WHEREAS, pursuant to Section 404 of the Clean Water Act, permits from the Norfolk District of the U.S. Army Corps of Engineers (Corps) will be required for fill in 2.55 acres and 6,005 linear feet of jurisdictional wetlands and other waters of the United States; and

WHEREAS, pursuant to regulations at 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, 16 U.S.C. 470f, and 33 CFR Part 325, Appendix C, Processing of Department of the Army Permits: Procedures for Protection of Historic Places, the Corps is required to take into account the effects of federally permitted undertakings on properties included in or eligible for inclusion in the National Register prior to the issuance of permits for the undertaking and to consult with the State Historic Preservation Officer (SHPO); and

WHEREAS, the Corps, in consultation with the SHPO, has determined that the permit action constitutes an undertaking within the meaning of the NHPA; and

WHEREAS the Corps, in consultation with the SHPO, has determined that the area of potential effect (APE) for the undertaking consists of the entire property within the Project boundary; and

WHEREAS, the Corps, in consultation with the SHPO, has completed a Phase I survey entitled *A Phase I Investigation of the Circa 420 Acre A. S. Ray Property Along Broad Run, Loudoun County, Virginia.*, dated 2001, and a Phase II evaluation entitled *Phase II Archaeological Investigation of Site 44LD0729, Loudoun County, Virginia*, dated January 2008, and

WHEREAS, the Corps, in consultation with the SHPO, has determined that sites 44LD0103, 44LD0104, 44LD0105, 44LD0107, 44LD0109, 44LD0151, 44LD0371, 44LD0372, 44LD0421, 44LD0495, 44LD0727, 44LD0728, 44LD0730, 44LD0731 and 44LD0732 are <u>not eligible</u> for the National Register of Historic Places (NRHP); and

WHEREAS, the Corps, in consultation with the SHPO, has determined that site 44LD0729 is <u>eligible</u> for inclusion in the NRHP; and

WHEREAS, the Corps, in consultation with the SHPO, has determined that issuance of permits to the Permittee for undertakings in jurisdictional wetlands or waters of the United States will have an adverse effect on site 44LD0729; and

ATTACHMENT 3

WHEREAS, the Corps has invited the participation of the Advisory Council on Historic Preservation (Council) to participate in consultation, and the Council has declined to participate; and

WHEREAS, the Corps invited Loudoun County (County) to participate in consultation and the County has agreed to participate; and

NOW THEREFORE, the Corps and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to satisfy the Corps' Section 106 responsibilities to take into account the effects of permitted activities on historic properties.

STIPULATIONS

The Corps will insure that the following stipulations are carried out:

I. TREATMENT OF ARCHAEOLOGICAL SITES

a. The Permittee shall develop a data recovery plan for site 44LD0729. The data recovery plan shall be consistent with the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* (48 FR 44734-37, September 29, 1983); the SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia: Additional Guidance for the Implementation of the Federal Standards Entitled Archaeology and Historic Preservation: Secretary of Interior's Standards and Guidelines* (48 FR 44742, September 29, 1983) 1999, rev. 2003, and shall take into account the ACHP's publications, *Recommended Approach for Consultation of Recovery of Significant Information from Archaeological Sites* (2002) and *Section 106 Archaeology Guidance* (June 2007) or subsequent revisions or replacements to these documents. The plan shall specify at a minimum, the following:

1. the property, properties, or portions of properties where site specific data recovery plans shall be carried out;

2. the portion(s) of the site(s) to be preserved in place, if any, as well as the measures to be taken to ensure continued preservation;

2. any property, properties, or portions of properties that will be destroyed or altered without data recovery;

3. the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

4. the methods to be used with an explanation of their relevance to the research questions;

5. the methods to be used in analysis, data management, and dissemination of data, including a schedule;

6. the proposed disposition of recovered materials and records;

7. proposed methods of disseminating the results of the work to the interested public and/or organizations who have expressed an interest in the data recovery; subject to revision based on the results of the data recovery proceeds;

8. a schedule for the implementation of the treatment plan and the submission of progress reports to the Corps, the SHPO and other consulting parties.

b. The Permittee shall submit the treatment plan to the Corps, the SHPO for review and approval. The Permittee shall provide one (1) copy to the consulting parties for review and comment. Following approval, the Permittee shall implement the treatment plan.

II. PROFESSIONAL QUALIFICATIONS

a. All archaeological work carried out pursuant to this Agreement shall be conducted by or under the direct supervision of an individual or individuals who meets, at a minimum, the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-9, September 29, 1983) in the appropriate discipline.

III. PREPARATION AND REVIEW OF DOCUMENTS

a. A draft of all final technical reports shall be submitted to the Corps and the SHPO and other consulting parties for review and comment. The Corps shall ensure that all comments received within thirty (30) days of report receipt shall be addressed in the final technical reports. Two copies of all final reports, bound and on acid-free paper, and one in an electronic format on CD shall be provided to the SHPO and one copy to the Corps and other consulting parties.

b. All technical reports resulting from this agreement shall be consistent with the federal standards entitled *Archaeology and Historic Preservation: Secretary of Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983) and SHPO's *Guidelines for Conducting Cultural Resource Survey in Virginia* (rev. 2003) or subsequent revisions or replacements to these documents.

c. The SHPO and other consulting parties agree to provide comments on all technical reports, treatment plans and other documentation arising from this Agreement within thirty (30) days of receipt. If no comments are received from the SHPO or other consulting parties, the Corps may assume the non-responding party's concurrence with its findings.

IV. CURATION

All archaeological materials and appropriate field and research notes, maps, drawing and photographic records collected as part of this project (with the exception of human skeletal remains) shall be cared for in the Loudoun County repository and in accordance with the requirements in 36 CFR 79, *Curation of Federally Owned and*

Administered Archaeological Collections. All such items will be made available to educational institutions and individual scholars for appropriate exhibit and/or research under the operating policies of Loudoun County.

POST-REVIEW DISCOVERIES

The Permittee shall ensure that all contracts for activities involving ground disturbance and/or construction contain the following provisions for treatment of post-review discoveries:

a. In the event that previously unidentified archaeological resources are discovered during ground disturbing activities within the area of potential effect, the Permittee shall immediately halt all construction work involving subsurface disturbance in the area of the resource and in the surrounding area where further subsurface resources can reasonably be expected to occur and immediately notify the Corps and the SHPO of the discovery.

b. The Corps and the SHPO, or an archaeologist approved by them, shall immediately inspect the work site and determine the area and nature of the affected archaeological resource. Construction work may then continue in the area outside the archaeological resource and any designated protective buffers as defined by the Corps and the SHPO, or their designated representative.

c. Within five (5) working days of the original notification of discovery, the Corps, in consultation with the SHPO, shall determine the National Register eligibility of the resource.

d. If the resource is determined eligible for the National Register, the Permittee shall prepare a plan for its avoidance, protection, or recovery of information. The Corps and SHPO shall approve such plan, prior to implementation.

e. Work in the affected area shall not proceed until either:

   1. the development and implementation of appropriate data recovery or other recommended mitigation procedures, or

   2. the determination is made that the located resources are not eligible for inclusion on the National Register.

f. Any disputes over the evaluation or treatment of previously unidentified resources shall be resolved as provided in the section of this Agreement entitled Dispute Resolution.

VI. HUMAN REMAINS

The Permittee shall make all reasonable efforts to avoid disturbing gravesites, including those containing Native American human remains and associated funerary artifacts. The Permittee shall treat all human remains in a manner consistent with the ACHP "Policy

Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects" (February 23, 2007; http://www.achp.gov/docs/hrpolicy0207.pdf).

The Permittee shall ensure that human skeletal remains and associated funerary objects encountered during the course of actions taken as a result of this Agreement shall be treated in accordance with the Regulations Governing Permits for the Archaeological Removal of Human Remains (Virginia Register 390-01-02) found in the *Code of Virginia* (10.1-2305, et seq., Virginia Antiquities Act). The Permittee will obtain a permit from the SHPO for the removal of human remains in accordance with the regulations stated above.

The Permittee shall make a good faith effort to ensure that the general public is excluded from viewing any American Indian burial site or associated funerary artifacts. The consulting parties to this agreement shall release no photographs of any American Indian burial site or associated funerary artifacts to the press or general public. The Corps shall notify the Virginia Council on Indians (VCI) when burials, human skeletal remains, or funerary artifacts are encountered on the project, prior to any analysis or recovery. The Corps shall deliver any American Indian human skeletal remains and associated funerary artifacts recovered pursuant to this agreement to the appropriate tribe to be reinterred. The disposition of any other human skeletal remains and associated funerary artifacts shall be governed as specified in any permit issued by the SHPO or any order of the local court authorizing their removal.

VI. DISPUTE RESOLUTION

a. Should any party to this Agreement object in writing to the Corps regarding any action carried out or proposed with respect to any undertakings covered by this Agreement or to implementation of this Agreement, the Corps shall consult with the objecting party to resolve the objection.

b. If after initiating such consultation, the Corps determines that the objection cannot be resolved through consultation, the Corps shall forward all documentation relevant to the objection to the ACHP, including the proposed response to the objection.

c. Within thirty (30) days after receipt of all pertinent documentation, the ACHP shall exercise one of the following options:

   1. Advise the Corps that the ACHP concurs with the Corps' proposed response to the objection, whereupon the Corps shall respond to the objection accordingly; or

   2. Provide the Corps with recommendations, which the Corps shall take into account in reaching a final decision regarding its response to the objection; or

   3. Notify the Corps that the objection will be referred for comment pursuant to 36 CFR 800.7(a)(4), and proceed to refer the objection and comment. The Corps shall take the resulting comment into account in accordance with 36 CFR 800.7(c)(4) and Section 110(l) of the NHPA.

c. Should the ACHP not exercise one of the above options within thirty (30) days after receipt of all pertinent documentation, the Corps may assume the ACHP's concurrence in its proposed response to the objection.

d. The Corps shall take into account any ACHP recommendation or comment provided in accordance with this stipulation with reference only to the subject of the objection; the Corps' responsibility to carry out all the actions under this Agreement that are not the subjects of the objections shall remain unchanged.

e. At any time during implementation of the measures stipulated in this Agreement, should an objection pertaining to this Agreement be raised by a member of the public, the Corps shall notify the parties to this Agreement and take the objection into account, consulting with the objector and, should the objector so request, with any of the parties to this Agreement to resolve the objection.

VII. AMENDMENTS AND TERMINATION

a. Any party to this Agreement may propose to the Corps that the Agreement be amended, whereupon the Corps will consult with the other parties to this Agreement to consider such an amendment. All signatories to the Agreement must agree to the proposed amendment in accordance with 36 CFR 800.6(c)(7).

b. If the Permittee decides it will not proceed with the undertaking, it shall so notify the Corps and the SHPO, and this Agreement shall become null and void.

c. If the Permittee determines that it cannot implement the terms of this Agreement, or if the Corps or SHPO determines that the Agreement is not being properly implemented, the Permittee, the Corps, or the SHPO may propose to the other parties to this Agreement that it be amended or terminated.

d. This Agreement may be terminated by any signatory to the Agreement in accordance with the procedures described in 36 CFR 800.6(c)(8). Termination shall include the submission of a technical report by the Permittee on any work done up to and including the date of termination. If the Corps is unable to execute another Memorandum following termination, the Corps may choose to modify, suspend, or revoke the Department of the Army permit as provided by 33 CFR 325.7.

VIII. DURATION OF AGREEMENT

This Agreement will continue in full force and effect until five (5) years after the date of the last signature. At any time in the six-month period prior to such date, the Corps may request the signatory parties to consider an extension or modification of this Agreement. No extension or modification will be effective unless all parties to the Agreement have agreed with it in writing.

IX. FAILURE TO CARRY OUT THE TERMS OF THE MEMORANDUM

In the event that the terms of this Memorandum are not carried out, the Corps shall comply with 36 C.F.R. 800 with regard to actions covered by this Memorandum.

Execution of this Memorandum of Agreement by the Corps and the SHPO and its submission to the ACHP in accordance with 36 CFR 800.6(b)(1)(iv), shall, pursuant to 36 CFR 800.6(c), be considered to be an agreement with the ACHP for the purposes of Section 110(l) of NHPA. Execution and submission of this Agreement, and implementation of its terms, evidence that the Corps has afforded the ACHP an opportunity to comment on the proposed undertaking and its effect on historic properties, and that the Corps has taken into account the effect of the undertaking on historic properties.

VIRGINIA STATE HISTORIC PRESERVATION OFFICER

By: _____ Date: 10/16/18

Kathleen S. Kilpatrick
Director, Virginia Department of
Historic Resources

NA DULLES REAL ESTATE INVESTOR, LLC

By: _____ Date: 10/6/2008

Michael W. Scott

Managing Member of Nokes Partners LLC, managing Member

NORFOLK DISTRICT, U. S. ARMY CORPS OF ENGINEERS

By: _____ Date: 10/8/08

J. Robert Hume, III
Chief, Regulatory Office

Date of Meeting: July 21, 2009

BOARD OF SUPERVISORS

ACTION ITEM

#13b

SUBJECT: Transportation and Land Use Committee Report
SPEX 2008-0054, Kincora Village – Office/Recreational Complex

ELECTION DISTRICT: Broad Run

CRITICAL ACTION DATE: Extended to July 21, 2009

STAFF CONTACT: Judi Birkitt, Department of Planning

RECOMMENDATIONS:

Transportation/ Land Use Committee: On June 29, 2009, the Transportation and Land Use Committee voted 2-1-1 (Kurtz—opposed, McGimsey—absent) to forward this application to the Board with a recommendation of approval subject to the Conditions dated June 26, 2009, as amended by the committee.

Staff: While the office and auxiliary retail uses are consistent with Keynote Employment policies, a proposed baseball stadium is not envisioned in Keynote Employment areas. Staff finds the conditions of approval acceptable, which seek to make office uses visually prominent from Pacific Boulevard and reduce environmental impacts.

BACKGROUND:

This application seeks special exception approval to permit a 75,000 square-foot minor league baseball stadium and up to 8 office buildings (901,211 square feet) with 74,000 square feet of auxiliary uses within the PD-IP (Planned Development – Industrial Park) zoning district. The property is a 60.27-acre portion of a larger 314-acre parcel and is located at the southwest quadrant of Route 7 and Route 28 interchange, east of the Broad Run. The property is within the Route 28 Taxing District, subject to the 1972 Zoning Ordinance, and planned for Keynote Employment uses.

The Board held a public hearing on this application on June 8, 2009. There were 35 public speakers with 29 in support of the application. Six spoke in opposition, voicing concerns about traffic and environmental impacts and existing vacant office buildings. The Board voted 7-2-0 (Burton and McGimsey—opposed) to forward the application to the Transportation and Land Use Committee (TLUC) for further discussion of timing and phasing, financing, and traffic impacts.

On June 22, 2009, the TLUC discussed Comprehensive Plan issues, enhancing the project's Keynote characteristics, water quality testing, and limiting special events to non-peak hour traffic times. Based on the applicant's June 17th traffic analysis and subject to a condition limiting special events to off-peak periods, transportation issues were resolved, but additional environmental details were needed. The committee continued the meeting to June 29th for further discussion.

On June 26, 2009, the applicant submitted an environmental plan for the TLUC's review. The plan proposes mitigating environmental impacts outside of the limits of the special exception area on the larger Kincora property. At the June 29th TLUC meeting, the committee expressed concern regarding the off-site preservation and mitigation. The committee also discussed water quality monitoring, the impact

of fireworks upon the heron rookery, weekday game start time, and the trigger for constructing four lanes of Pacific Boulevard. The committee voted 2-1-1 (Kurtz—opposed, McGimsey—absent) to forward the application to the Board with a recommendation of approval, subject to the Conditions dated June 26, 2009, as amended by the committee.

Staff provides the following issue update since the June 29, 2009 TLUC meeting:

1. Land Use – A stadium is not a use envisioned in areas planned for Keynote Employment. Conditions seek to make office uses visually prominent from Pacific Boulevard.
2. Transportation – Conditions have been added to limit weekday game start time to no earlier than 7:00 p.m. (Condition 5) and to require construction of 4 lanes of Pacific Boulevard with either the stadium or with 300,000 square feet of office uses (Condition 24).
3. Environmental
   a. Mitigation Plan - The applicant submitted a revised mitigation plan on July 9, 2009 (Exhibit B - Restoration Concept Plan). The request to mitigate environmental impacts outside of the limits of the special exception remains the same, with minor clarifications on the mitigation types and acreages presented in the table. The County Attorney has no issue with locating mitigation for environmental impacts outside of the limits of the special exception and recommends conditions that would require the applicant to: (a) complete the mitigation shown on Exhibit B prior to occupancy of the first site plan for a special exception use on the property, (b) bond the mitigation areas (i.e., planting trees, enhancing streams), and (c) grant the preservation and mitigation areas to the County as contained in an Open Space Easement Area (Conditions 37-40). The Applicant agrees to such conditions, as well as a condition requiring the size of the trees within the reforestation areas shown on Exhibit B to be three gallon.
   b. Water Quality Monitoring – The water quality monitoring condition has been revised to require quarterly testing, immediate action to investigate any identified water quality issues, and if the issue is a result of activity on the property, immediate remediation (Condition 43).
   c. Fireworks Impacts Upon Heron Rookery – The Virginia Department of Game and Inland Fisheries (DGIF) advises that due to the temporary and periodic nature of fireworks, and since fireworks would be occurring outside of the 1,400-foot protective buffer, adverse impacts are not likely and placing a time of year restriction on fireworks is not necessary. The Applicant has agreed to a condition that would prohibit fireworks March 1 through June 30, during the nesting period, which is consistent with the Loudoun Wildlife Conservancy's recommendation (Refer to Attachment 2 and Condition 45). Additionally, the trail connection to the Broad Run referred to in Condition 30 would not impact the rookery, since the trail would be located more than 1,000 feet from the rookery.
4. Conditions of Approval – The attached comparison version of the conditions of approval (Attachment 4) reflects the TLUC's revisions and includes locating mitigation for environmental impacts outside of the special exception area on the larger Kincora property. Conditions have been reviewed by the County Attorney's Office. The Applicant is in agreement with the Conditions. A clean version of the Conditions in final form will be provided in a supplemental packet.

FISCAL IMPACT:

Staff views the fiscal impact related to this special exception application as being dependent upon other ongoing processes and decisions. It is difficult to examine the fiscal impact of the proposed special

exception absent a larger discussion of the differing development plans for the entire Kincora area. If the applicant's associated rezoning or other affiliated financing vehicles are examined by the Board of Supervisors, staff will provide additional analysis based upon the development plans presented at that time.

ALTERNATIVES:

The Board may approve, deny, or continue discussion of the special exception request, subject to a timeline extension by the Applicant.

DRAFT MOTIONS:

1. I move that the Board of Supervisors approve SPEX 2008-0054, Kincora Village – Office/ Recreational Complex, subject to the Conditions of Approval dated July 16, 2009, contained in Attachment 4, and with the attached Findings for Approval.

OR,

2. I move that the Board of Supervisors deny SPEX 2008-0054, Kincora Village – Office/Recreational Complex based on the following Findings:

   _____

   _____

OR,

3. I move an alternate motion.

ATTACHMENTS:

1. Vicinity Map
2. Correspondence Regarding Fireworks from the Virginia Department of Game and Inland Fisheries (7/15/09) and the Loudoun Wildlife Conservancy (3/6/09)
3. TLUC Findings for Approval
4. Conditions of Approval Comparison Version (as amended by the TLUC, including recommended revisions by Zoning and the County Attorney's Office)
5. Conditions of Approval, dated July 16, 2009

equipment fixtures shall be screened from view from Pacific Boulevard and Route 28 through landscaping, fencing, parapet walls, architectural treatment, or berming.

~~15.~~21. Lighting. All exterior lighting within the Special Exception Area shall be designed and installed to minimize light trespass and the ~~view~~ visibility of lighting from properties ~~outside~~ offsite of the Special Exception Area. The following standards shall also apply:

a. Light Fixtures. Exterior building, parking structure, and parking lot lighting shall be full cut-off and fully shielded and shall direct light downwards and into the interior of the Property and away from surrounding public roads and properties. The light element (lamp or globe) of a fixture shall not extend below the cutoff shield. Low pressure sodium lamps shall be prohibited throughout the Property.

b. Plaza and Exterior Building Lighting. Lighting within the plaza areas (as designated on the SPEX Plat) and exterior building lighting associated with the office and auxiliary uses, including security lighting, shall not exceed a maximum average illumination of five (5) foot-candles at grade level unless otherwise required by law, ordinance, or regulation.

c. Parking Lot Lighting. All parking lot lighting within the Special Exception Area shall not exceed a maximum average illumination of two (2) foot-candles at grade level. Parking lot lighting shall be turned off within one hour following the end of evening activities, exclusive of safety or security lighting.

d. Recreational Facility Complex Lighting. Outdoor lighting at the recreational facility shall be Musco Light-Structure Green™ outdoor field lighting or the performing equivalent. If the outdoor field lighting needs to be replaced, the replacement lighting shall match the existing lighting model or be replaced with an equivalent or more technologically advanced outdoor field lighting model designed to provide equivalent or better reduction of off-site glare and reflection. Outdoor recreational facility lighting shall be directed inward and downward toward the field and shall incorporate a reflector technology system that directs light onto the field and minimizes glare and spillage onto adjacent properties. Recreational facility lighting shall be turned off within one hour following the end of evening activities, exclusive of safety or security lighting.

Transportation

~~20.~~22. Route 28 Right-of-way. Prior to approval of the first site plan for any Special Exception Use~~use subject to this special exception,~~ the Applicant shall grant to the County a reservation for future public street dedication of ~~reserve~~ sufficient right-of-way to permit the future widening of Route 28 as an eight-lane divided roadway, together with any necessary ~~as well as~~ temporary construction and drainage easements~~, if needed~~. Such right-of-way shall be dedicated to the County or VDOT upon request by the County or VDOT and at no cost to the County or VDOT.

~~21.~~23. Pacific Boulevard Right-of-way Dedication. Prior to approval of (1) the first site plan for any ~~use subject to this special exception~~Special Exception Use or at the request of the

County, the Applicant shall dedicate to the County, at no cost to the County, sufficient right-of-way, as shown on the SPEX Plat, for construction of a full four (4) lane divided section of Pacific Boulevard, including applicable turn lanes and easements, from Gloucester Parkway to the northernmost entrance from Pacific Boulevard into the Property as shown on the SPEX Plat.

24. Pacific Boulevard Construction. Prior to approval of (1) the first site plan for ~~(1)~~ the recreational facility or (2) the site plan for office uses that would result in the aggregate of office uses on the Property exceeding ~~in excess of~~ 300,000 square feet, whichever occurs first, the Applicant shall construct, as shown on the SPEX Plat, the full four (4) lane divided section of Pacific Boulevard from Gloucester Parkway to the northernmost entrance from Pacific Boulevard into the Property and including applicable turn lanes and easements, sidewalks, and a multi-purpose trail. Such road shall be open to public traffic prior to issuance of the first occupancy permit for (1) the recreational facility or (2) office uses that would result in the aggregate of office uses on the Property exceeding ~~in excess of~~ 300,000 square feet, whichever occurs first.

If the first site plan for the Property does not include the recreational facility or office uses that would result in the aggregate of office uses on the Property exceeding ~~in excess of~~ 300,000 square feet, then, prior to approval of the first site plan for the Special Exception Area, the Applicant shall construct a half-section of Pacific Boulevard including necessary turn lanes,e asements, sidewalks, and a multi-purpose trail, subject to approval by VDOT and the County. Such road shall be open to public traffic prior to issuance of the first occupancy permit for a Special Exception Use on the Property.

~~22.~~25. Pacific Boulevard Trail and Sidewalk. Prior to approval of the first site plan for the ~~special exception uses~~Special Exception Area,the Applicant shall:

a. Dedicate an easement along the west side of the Pacific Boulevard right-of-way dedication, referenced in condition 23 above, that is a minimum of 14 feet in width and varying up to 16 feet in width where the topography, vegetation, utilities, and screening/buffering allow, for the purpose of constructing a multi-purpose trail that is a minimum of 10 feet in width and expands up to 12 feet in width where the topography, vegetation, utilities and screening/buffering allow, and

b. In addition to the right-of-way dedicated pursuant to condition 23 above, dedicate additional ~~Include~~ right-of-way ~~in the dedication~~ for Pacific Boulevard as shown on the SPEX Plat from Gloucester Parkway to the median crossover for the southernmost portion of the Special Exception Area for the purpose of constructing a five (5) foot wide sidewalk. The Applicant shall provide, subject to VDOT and County approval, a painted crosswalk at the median crossover for the southernmost portion of the Special Exception Area to connect the sidewalk on the east side of Pacific Boulevard with the trail on the west side of Pacific Boulevard.

26. Turn Lanes. Prior to approval of the first site plan that includes the recreational facility, the Applicant shall construct dual left turn lanes from southbound Pacific Boulevard onto eastbound Gloucester Parkway and single left turn lanes from northbound Pacific Boulevard

~~at~~ into site entrances # 2 and # 3 of the Special Exception Area ~~the two southernmost site entrances from northbound Pacific Boulevard into the recreational facility (site entrances #2 and 3 as depicted on the Traffic Impact Analysis~~Exhibit C). All turn lanes shall be in conformance with applicable VDOT standards.

27. Traffic Signalization at Pacific Boulevard and Each Site Entrance. The Applicant shall install traffic signals at each of the three site entrance intersections with Pacific Boulevard and at the intersection of Pacific Boulevard and Gloucester Parkway when warranted. The Applicant shall submit to the County and VDOT a traffic signal warrant study in an acceptable format to the County and VDOT (a) in conjunction with the submission of the first site plan for the recreational facility, or (b) at the request of the County in association with subsequent site plan submissions. If warranted, the Applicant shall install the signal(s) subject to VDOT approval, and the signal(s) shall be operational prior to the issuance of the first occupancy permit for the site plan in which the traffic study warranted a traffic signal. The Applicant shall fund all warrant study and signalization costs.

28. Traffic Operations Plan ("TOP"). The Applicant shall provide personnel, at no cost to the County, to direct and manage traffic that is entering and exiting the Property for athletic games and special events at the recreational facility. In conjunction with submission of the first site plan for the recreational facility, the Applicant shall submit a TOP to the Office of Transportation Services and the Fire and Rescue Office of Emergency Management for review and approval to ensure that no unmitigated traffic conditions are created during athletic games and special events at the recreational facility. The TOP shall address issues related to ingress/egress, traffic flow, parking, and pedestrian circulation and safety. The TOP shall also address when and where a demand exists for the Applicant to transport attendees from Loudoun County towns and villages to and from athletic games.

29. Pedestrian Connection to Broad Run. At the request of the County, the Applicant shall provide a pedestrian point of connection from the recreational facility to the Broad Run floodplain for purposes of connecting to the trail system proposed to be located within the Broad Run floodplain corridor.

30. Private Streets. All private streets developed on the Property shall be owned and maintained by an Owners Association (OA) with appropriate covenants, restrictions, maintenance obligations, and assessments to be set forth in a declaration of covenants and restrictions, in form as approved by the County Attorney, recorded among the land records of Loudoun County prior to the first plat creating such private streets. Private streets shall be created and established as recorded private access easements, subject to County review and approval at the time of applicable site plan approvals, and shall be designed and constructed as shown on Sheet 13A of the SPEX Plat (labeled Road Sections) and in accordance with the standards of the Loudoun County Facilities Standards Manual (FSM) applicable at the time such private streets are submitted to the County for approval.

31. Highway Noise. In conjunction with submission of the initial site plan for ~~the~~ any Special Exception ~~u~~Uses ~~that are~~ located within 1,500 feet of Route 28 or Gloucester Parkway, the Applicant shall submit a noise impact analysis to the County for review of the projected noise impacts from Route 28 and Gloucester Parkway on such uses. The Applicant shall

incorporate mitigation strategies that result in noise levels of 65 dBA or lower for the plaza area and recreational facility and 70 dBA or lower for the office uses.

Transit

~~27.~~32. Bus Shelters. Prior to issuance of the initial occupancy permit for any use subject to this Special Exception, the Applicant shall install, at no cost to the County, two (2) bus shelters along Pacific Boulevard within the Special Exception Area and in locations to be determined in coordination with the Office of Transportation Services or other appropriate County agency. The bus shelters shall be maintained by the OA and shall be depicted on each site plan

~~28.~~33. Employee Shuttle. Prior to issuance of an occupancy permit for the first office building adjacent to Pacific Boulevard, the Applicant shall provide a private shuttle service utilizing vehicles with a minimum capacity of twenty (20) persons for the transport of employees between ~~the Property~~said office building and the nearest local transit facility. In addition, until such time as regional transit service is available to the site, the Applicant shall provide shuttle service to the nearest park-and-ride facility or regional transit facility.

~~29.~~34. Transit for Recreational Facility Attendees. The Applicant shall work with the Loudoun County Office of Transportation Services (OTS) to identify viable options for providing public mass transit to the general public before and after athletic games and special events at the recreational facility. These options may include (but are not limited to) the Applicant funding after hours service or rerouting of some of the local fixed route transit services to provide transit to and from the recreational facility; contracting with private transportation providers for shuttles to certain neighborhoods; or utilizing buses owned and operated by the Applicant to ~~access~~ provide transit service to designated communities. To the extent there is adequate demand as determined by the County, the Applicant, at the Applicant's expense, shall meet this transportation need. The Applicant shall initiate and maintain a marketing program to promote such shuttle service, and shall include references to this service in advertising related to the recreational facility.

Transportation Demand Management (TDM)

~~30.~~35. The Applicant's TDM program shall consist of the following:

a. Preferred Parking Spaces. Provide signage designating a minimum of five percent (5%) of the parking spaces provided for each office building as preferred parking spaces for (a) carpool/vanpool vehicles, or (b) fuel efficient or car sharing vehicles. These preferred parking spaces shall be identified on the site plan for each respective office building and shall be located proximate and convenient to the primary entrance of the office building, while allowing for handicapped accessible parking spaces.

b. Employee Transportation Coordinator (ETC). Identify an Employee Transportation Coordinator from each office building to serve as the primary TDM contact with the Loudoun County Office of Transportation Services. ETCs shall promote and encourage

commuting alternatives in cooperation with other private and public TDM efforts or Transportation Management Associations. ETC's shall meet with OTS staff to clarify commuting options to the site, and formulate promotions and programs.

c. Employee Commute Surveys. Conduct initial and biennial employee commute surveys to benchmark and measure progress toward reducing vehicle trips and vehicle emissions.

d. Information Access. Provide access to alternative commute information, including free carpool ridematching service, on-site transportation fairs or similar efforts. The Applicant shall provide all new hires (full-time, part-time or contract) written information on alternative commute options and efforts toward congestion mitigation and compliance with air quality standards.

e. Biennial Travel Reduction Plans. Prior to occupancy of the first office building, submit to OTS biennial travel reduction plans outlining strategies for reducing vehicle trips during peak hours.

f. Display Racks. Prior to occupancy of the first office building, install and maintain permanent displays or "take one" racks for alternative commute information such as transit schedules, park and ride lot maps, rideshare information and incentives, in the office buildings.

g. Intranet/Internet Presence. Prior to occupancy of the first office building, provide information on office employers' intranet or internet sites detailing alternative modes of transportation and other travel reduction measures.

h. Flextime/Telework/Compressed Work Schedules. Prior to occupancy of the first office building, promote flextime, compressed work schedules, and telework to decrease employee travel during peak hours. This promotion shall include at a minimum an annual transportation fair for employees and including educational materials in the tenant handbook. In addition, commuting educational materials shall be included in the tenant handbook, prepared by the Applicant and distributed to all tenants.

i. Bicycle Storage Facilities/Racks. The Applicant shall install secure and weather-protected bicycle storage facilities or racks for a minimum of twenty (20) bicycles for each office building and a minimum of thirty (30) bicycles for the recreational facility. Such minimum bicycle storage facilities/racks shall be installed prior to the occupancy permit for each respective office building and the recreational facility, at strategic locations on the Property that provide ease of access to entrances and facilities and separation from vehicular traffic patterns. The location and type of bicycle racks used shall be consistent with the recommendations outlined in the Association of Pedestrian and Bicycle Professionals (APBP) "Bicycle Parking Guidelines". The locations of such secure bicycle storage facilities shall be depicted on the respective site plans for each office building and the recreational facility.

j. Showers and Lockers. Prior to occupancy of each office building, provide accessible

showers, changing facilities, and lockers in each office building.

Environmental

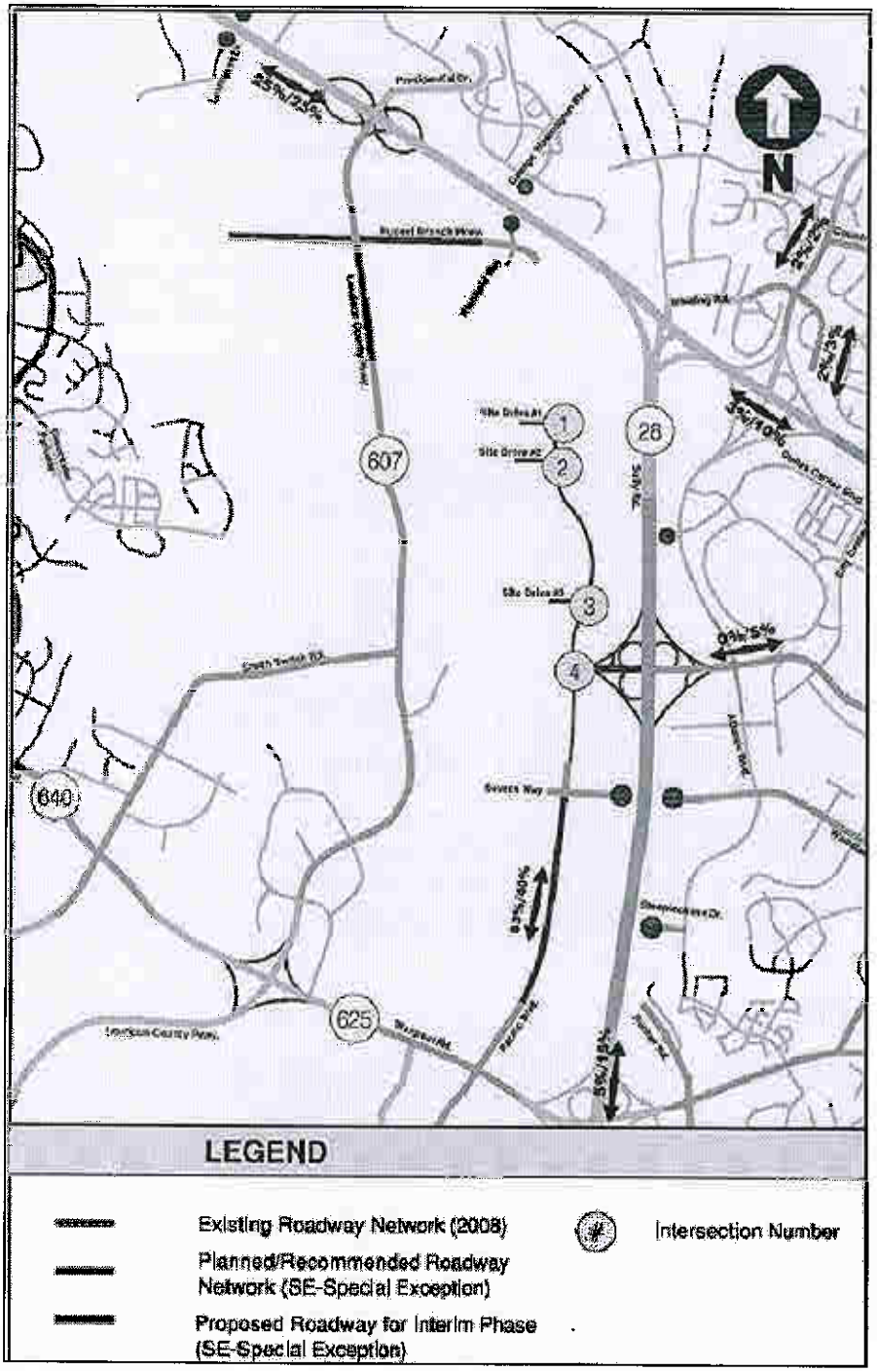
~~31.~~36. Limits of Clearing and Grading. The limits of clearing and grading shall be depicted as shown on the SPEX Plat on each site plan submission. Encroachments beyond the limits of clearing and grading shall only be permitted for utilities, road access, stormwater management facilities, wetland and stream mitigation activities, or connections to trails located within the floodplain.

~~32.~~37. Wetland and Stream Mitigation, Riparian Preservation and Reforestation, and Wetland Mitigation Bank. Prior to issuance of the first occupancy permit for any of the Special Exception Uses on the Property, the Applicant shall, subject to issuance of, and pursuant to, all requisite permits and approvals, provide wetland mitigation, stream enhancement, riparian preservation and reforestation, and install the wetland mitigation bank in the amounts specified in, at the general locations depicted on, and of a character consistent with, the Kincora Broad Run Restoration Concept Plan dated June 2009, as revised through 7/8/09, prepared by Wetland Studies and Solutions, Inc. of Gainesville, Virginia (the "Restoration Concept Plan"), attached to these Conditions as Exhibit B. Such wetland mitigation, stream enhancement, RSCRE reforestation, riparian preservation and reforestation, and wetland mitigation bank shall be in substantial conformance with the design specifications, success criteria, and monitoring program contained in the Kincora On-Site Mitigation Plan (Grading Permit X20090680001) dated April 2008, as amended and approved by the County, with the exception that the planting plan (Sheets 26 through 40) shall be upgraded to incorporate the following minimum specifications for the category labeled "Additional Trees (Required for All Alternative)" depicted on Sheets 37 through 39 ~~and labeled as "" on Sheet 40~~: three (3) gallon, containerized, native deciduous trees planted at a density of 222 trees per acre on a fourteen (14) foot by fourteen (14) foot staggered grid.

In the event that stream and wetland mitigation exceeding the quantities identified in Exhibit B is required to offset impacts associated with the Special Exception Uses on the Property (PIN #041-29-8238), the Applicant shall provide the additional mitigation elsewhere on the Property and/or on Tax Map Parcel PIN #'s 042-29-6582 and/or 042-49-0209 to the maximum extent possible. If such additional mitigation cannot be provided on the aforementioned Tax Map Parcels, the Applicant shall provide the mitigation according to the following prioritized order: (1) within the Broad Run Watershed within the same geographic Planning Policy Area, (2) within the Broad Run Watershed outside the Property's geographic Planning Policy Area, and (3) within Loudoun County, subject to approval by the U.S. Army Corps of Engineers and the Virginia Department of Environmental Quality.

~~32.~~38. Open Space Easement. Prior to the approval of the first site plan or construction plans and profiles for any Special Exception Use on the Property, the Applicant shall grant the County a perpetual Open Space Easement pursuant to Title 10.1, Chapter 17 Open- Space Land Act of the Code of Virginia ("Easement"), over and upon all of the land areas identified on the Restoration Concept Plan (Exhibit B) by the following labels: "Riparian Preservation Area", "Conservation Area", "Riparian Reforestation Area", "RSCRE Reforestation Area",

EXHIBIT C


N
607
28
640
625
1
2
3
4
LEGEND
Existing Roadway Network (2008)
Planned/Recommended Roadway Network (SE-Special Exception)
Proposed Roadway for Interim Phase (SE-Special Exception)
Intersection Number

constructed by the private sector, meet standards that allow their acceptance into the state system for maintenance/operation. The County intends to continue the current VDOT/County relationship and to implement changes in VDOT policies and standards. These changes will provide a cost-effective and safe road network with flexibility to accommodate the County's land use and community design objectives.

The County continues to encourage VDOT to participate as a member of the County's transportation planning team. At the same time, the County will continue its present practice of reviewing VDOT project plans for VTDP and Secondary Road Improvement Programs, while taking steps with VDOT to arrange a more formal role for the County and local citizens and associations in the design process. The County will continue to urge VDOT to design its projects in rural Loudoun County with more sensitivity to the environment, the ambiance, and rural character of the area. Examples of road improvements that have been designed with extensive participation by the County and local citizens include Snickersville Turnpike (Route 734), and Lime Kiln Road (Route 733).

State and County Partnership Policies

1. The County will continue to encourage the Virginia Department of Transportation (VDOT) to participate in long-range planning processes to provide the input for the formulations of County transportation policy.

2. The County will increase its involvement in VDOT decision processes and will continue to seek mutually acceptable policy positions through formal and informal channels. Participation of local citizens and associations in local road design will be encouraged as part of the Primary and Secondary Road Programs.

3. The County will continue to seek VDOT's input into development applications through the County's application referral process, and by working with VDOT and applicants to ensure that proposed public streets are accepted into the state's system.

The County, VDOT, and local citizens collaborated on the road improvements to Snickersville Turnpike (Route 734).

Level of Service Standards

The County devotes attention to the comprehensive review of land development applications. The adequacy of the road network serving a property is frequently one of the most significant issues faced in the development process. The *Revised General Plan* and associated area plans outline where growth can occur and the allowable densities, while the *Revised Countywide Transportation Plan* provides direction concerning existing and planned transportation facility capacities.

The *Revised Countywide Transportation Plan* and *Facilities Standards Manual* (FSM) serve as a guide for all transportation improvements in the County. Specific provisions of the *Land Subdivision and Development Ordinance* (LSDO) and the Zoning Ordinance also address the intended purpose that various types of roads serve different kinds of development. Land development proposals are reviewed for conformance with the policies of the *Revised Countywide Transportation Plan* as well as to determine whether the planned transportation network can support the proposed development. The County provides specific criteria in evaluating applications that will be used to ensure that higher intensity development typical of the Suburban Policy Area does not lead to a drop in level of service (LOS) below LOS 'D' on roads. LOS 'D', on a scale of 'A' through 'F', is an accepted design goal during peak periods for transportation facilities in urban areas. Travel speeds and the freedom to maneuver under LOS 'D' begin to decline with increasing volumes due to the traffic stream's limitation on absorbing disruptions. Traffic conditions, nonetheless, are stable and severe congestion is avoided.

ATTACHMENT 5

Maintaining LOS 'C', characterized by less impeded conditions, throughout the day is not practical and would be cost prohibitive to implement in an urbanizing area. The *Revised Countywide Transportation Plan* states that the LOS on the eastern road network should not fall below LOS 'D'.

Level of Service (LOS) Standards Policies

1. Land development will only occur along roads that currently function at Level of Service 'D' or better in the Suburban and Transition Policy Areas where planned road improvements would improve the level of service; or alternatively development may occur where the developer provides the improvements consistent with the phases of the development in a timely manner such that the LOS does not fall below LOS 'D'. Improvements for the first phase of a development will be provided in advance of development.

2. Level of Service 'D' or better must be demonstrated for new development at the time of the construction of the first residential unit or commercial/industrial building in the Suburban and Transition Policy Areas, using peak hour and daily traffic volumes, for existing and future road network.

3. A traffic analysis will be performed as required by the Zoning Ordinance and *Land Subdivision and Development Ordinance.* Traffic studies are required for land use applications regardless of the number of trips or the size of the development. However, the scope of the traffic study information can vary depending on the specific case and location. Transportation staff will meet with the applicant to discuss and agree on the scope of the study prior to submission.

4. The first and subsequent phases of development of each project permitted by rezoning will be defined by the actual capacity of the existing road network or improvements to be completed by the developer, VDOT or others prior to the completion of any residential or other approved land use by the existing level of service.

Local Control and Management Options

In Virginia, responsibility for roads in most counties lies with the state. However, state legislation permits counties to take responsibility for road management. This local control is mandatory in incorporated communities larger than 3,500 people and in cities. Leesburg presently has this responsibility and Purcellville is likely to be required to take this on soon. Recent indications are that the state may encourage increased local responsibility as a means of reducing costs. The terms of transferring responsibility from VDOT to Loudoun County would require agreement by the Commonwealth Transportation Board and voter approval in a public referendum. Local management and responsibility for roads would entail significant costs to the County.

It has been estimated, based on a 1993 Fairfax County study, that should Loudoun choose to maintain its local roads, the County could face annual maintenance expenditures of up to $10 million, depending on the level of state funding to the County. This figure does not include the potentially larger costs of additional preconstruction and review staff, equipment, materials, and other costs associated with local control of secondary roads. For now, the County has chosen to continue relying on VDOT's management and maintenance support of all primary and secondary public roads in the county. The County will simultaneously examine ways of working with VDOT to allow for the efficient and flexible use of maintenance funds for appropriately-designed improvements.

The Public-Private Transportation Act of 1995 (PPTA) is the legislative framework enabling the Commonwealth of Virginia, qualifying local governments and certain other political entities to enter into agreements authorizing private entities to acquire, construct, improve, maintain, and/or operate qualifying transportation facilities. The public entities may either solicit or accept unsolicited proposals from private sources. Loudoun County may exercise the opportunities offered by the PPTA to fund needed transportation improvements in the Route 28 and Dulles Greenway Corridors. Planned transportation projects beyond those currently constructed in these corridors will be evaluated to assess whether application of the PPTA is appropriate.

TRIP GENERATION (REZONING APPLICATION - PHASE I - 2011)

In order to calculate the trip generation for the proposed development program (Phase I) by 2011, the ITE's Trip Generation, 7th Edition publication was used to determine the trips into and out of the project site for the weekday morning and afternoon peak hours as well as for an entire weekday. Average daily volumes for residential developments were estimated based on Loudoun County's trip generation rates.

In addition to the new site trip estimates, trip generation reductions were considered to account for internal synergy, pass-by trips, and mode split reduction, which are listed below:

- *Pass-by trips:* A 25% reduction will be considered on proposed retail trips during the afternoon peak period only to represent traffic pulled from background traffic stream.
- *Internal trips:* According to the VDOT's guidelines for Chapter 527 traffic study, internal capture reduction will be considered for mixed-use land bays.
- *Mode split reduction:* A 10% reduction on proposed office and residential trips will be considered to reflect expected transit usage mode split by future public transportation within the study area. This reduction assumes associated transit commitments from the applicant for implementation.

Table 3: Trip Generation (Rezoning Application - Phase I – 2011)

Land Use	ITE Code	Size	Units	Weekday							Saturday		
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
APPROVED USE – PHASE I													
PD-IP (0.4 FAR)													
Office Park	750	1050.2	kSF	1,391	171	1,562	193	1,184	1,377	11,353	110	38	148
PROPOSED PLAN - MIXED USE DEVELOPMENT – PHASE I													
Residential Development													
Townhouses/Condos	230	700	DU	42	203	245	199	98	297	6,090	133	113	246
Internal Trip Reduction		*15%*		*-7*	*-30*	*-37*	*-30*	*-15*	*-45*	*-914*	*-20*	*-17*	*-37*
Mode Split Reduction		*10%*		*-5*	*-21*	*-26*	*-22*	*-10*	*-32*	*-653*	*-15*	*-12*	*-27*
Subtotal Residential Development		**700**	**DU**	**30**	**153**	**183**	**149**	**73**	**222**	**4,567**	**99**	**85**	**184**
Office Development													
Hotel	310	270	Rooms	87	54	141	85	75	160	2,044	107	84	191
Office Park	750	900.0	kSF	1,222	150	1,372	168	1,028	1,196	9,788	94	32	126
Subtotal Office Development		1,170.0	kSF	1,309	204	1,513	253	1,103	1,356	11,832	201	116	317
Internal Trip Reduction		*15%*		*-27*	*-6*	*-33*	*-9*	*-19*	*-28*	*-530*	*-4*	*-4*	*-8*
Mode Split Reduction		*10%*		*-131*	*-21*	*-152*	*-26*	*-110*	*-136*	*-1,184*	*-21*	*-11*	*-32*
Subtotal Office Development		**1,170.0**	**kSF**	**1,151**	**177**	**1,328**	**218**	**974**	**1,192**	**10,118**	**176**	**101**	**277**

Land Use	ITE Code	Size	Units	Weekday							Saturday		
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
Retail Development													
Shopping Center	820	150.0	kSF	122	78	200	394	425	819	8,839	587	540	1127
Internal Trip Reduction		*15%*		*-3*	*-1*	*-4*	*-6*	*-11*	*-17*	*-384*	*-13*	*-16*	*-29*
Pass-by Reduction		*25%*		*-31*	*-19*	*-50*	*-99*	*-106*	*-205*	*-2,210*	*-147*	*-135*	*-282*
Subtotal Retail Development		**150.0**	**kSF**	**88**	**58**	**146**	**289**	**308**	**597**	**6,245**	**427**	**389**	**816**
Stadium													
Baseball Stadium*		**5,500**	**Seats**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**386**	**15**	**401**
Total Proposed Site Trips (Without Reductions)				1,473	485	1,958	846	1,626	2,472	26,761	1,307	784	2,091
Total Reduced Trips				*-204*	*-97*	*-301*	*-190*	*-271*	*-461*	*-5,831*	*-219*	*-194*	*-413*
TOTAL PROPOSED SITE TRIPS (WITH REDUCTIONS)				**1,269**	**388**	**1,657**	**656**	**1,355**	**2,011**	**20,930**	**1,088**	**590**	**1,678**
Difference (Proposed – Approved)				-122	217	95	463	171	634	9,577	978	552	1,530

***Trip Generation based on Observed Rates (Details in the appendix)**

Table 3 shows that the project site will generate approximately 1,657 new weekday morning peak hour trips, approximately 2,011 new weekday afternoon peak hour trips, approximately 1,678 new Saturday peak hour trips, and approximately 20,930 new average daily trips with the proposed Kincora development in 2011.

SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT (2011)

Site Access

Access to the proposed Kincora site will be provided along the future Pacific Boulevard. The project site will be primarily served by Route 28 and the planned grade-separated interchange at the existing intersection of Route 28 with Nokes Boulevard. The site will be bisected by future regional roads, such as Pacific Boulevard and Gloucester Parkway. These regional roads are planned for a capacity in excess of what is required to serve the site during the interim 2011 traffic conditions. The graphics included in this section represent the regional benefits these roads provide by showing them serving a dual purpose. The following is a description of these two roads:

- **Pacific Boulevard (from existing terminus north to Future Site Drive #1)** will be a two-lane, local access, rural road with left and right turn lanes at major intersections in 2011.
- **Gloucester Parkway (from Route 28/Nokes Boulevard interchange west to Pacific Boulevard)** will be a four-lane, controlled access, median divided, major collector with left and right turn lanes at at-grade intersections in 2011.

TRIP GENERATION (REZONING APPLICATION PHASE II - 2015)

In order to calculate the trip generation for proposed development program by 2015, the ITE's Trip Generation, 7th Edition publication was used to determine the trips into and out of the project site for the weekday morning and afternoon peak hours as well as for an entire weekday. Average daily volumes for residential developments were estimated based on Loudoun County's trip generation rates.

In addition to the new site trip estimates, trip generation reductions were considered to account for internal synergy, pass-by trips, and mode split reduction, which are listed below:

- *Pass-by trips:* A 25% reduction will be considered on proposed retail trips during the afternoon peak period only to represent traffic pulled from background traffic stream. A 40% reduction was applied to the proposed bank.
- *Internal trips:* According to the VDOT's guidelines for Chapter 527 traffic study, internal capture reduction will be considered for mixed-use land bays.
- *Mode split reduction:* A 10% reduction on proposed office and residential trips will be considered to reflect expected transit usage mode split by future public transportation within the study area. This reduction assumes associated transit commitments from the applicant for implementation.

These reductions were applied to the appropriate site trip assignment. **Table 8** presents the new trips generated by the proposed development program in 2015.

Table 8: Trip Generation (Rezoning application, Phase II – 2015)

Land Use	ITE Code	Size	Units	Weekday						Saturday		
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
APPROVED USE – PHASE II													
PD-IP (0.4 FAR)													
Office Park	750	3,132.0	kSF	3,481	430	3,911	546	3,350	3,896	33,045	325	114	439
PROPOSED PLAN - MIXED USE DEVELOPMENT - PHASE II													
Residential Development													
Townhouses/Condos	230	1,400	DU	73	354	427	352	172	524	12,180	243	206	449
Internal Trip Reduction		15%		*-11*	*-54*	*-65*	*-53*	*-26*	*-79*	*-1,827*	*-37*	*-31*	*-68*
Mode Split Reduction		10%		*-8*	*-35*	*-43*	*-36*	*-17*	*-53*	*-1,218*	*-25*	*-20*	*-45*
Subtotal Residential Development		**1,400**	**DU**	**54**	**265**	**319**	**263**	**129**	**392**	**9,135**	**181**	**155**	**336**
Office Development													
Hotel	310	720	Rooms	289	184	473	226	199	425	6,071	282	220	502
Office Park	750	1,700.0	kSF	2,084	257	2,341	303	1,861	2,164	18,124	177	61	238
Subtotal Office Development		2,420.0	kSF	2,373	441	2,814	529	2,060	2,589	24,195	459	281	740

Land Use	ITE Code	Size	Units	Weekday						Saturday			
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
Internal Trip Reduction		*15%*		*-42*	*-9*	*-51*	*-15*	*-30*	*-45*	*-1,060*	*-7*	*-8*	*-15*
Mode Split Reduction		*10%*		*-238*	*-44*	*-282*	*-53*	*-206*	*-259*	*-2,420*	*-46*	*-28*	*-74*
Subtotal Office Development		**2,420.0**	**kSF**	**2,093**	**388**	**2,481**	**461**	**1,824**	**2,285**	**20,715**	**406**	**245**	**651**
Retail Development													
Shopping Center	820	209.0	kSF	149	95	244	490	529	1,019	10,966	727	671	1398
Health/Fitness Club	492	35.0	kSF	19	24	43	73	69	142	1,153	46	45	91
Drive-in Banks	912	16.0	kSF	111	87	198	366	366	732	3,175	303	291	594
High-Turnover (Sit-Down) Restaurants	932	40.0	kSF	240	221	461	267	170	437	5,086	504	296	800
Subtotal Retail Development		300.0	kSF	519	427	946	1,196	1,134	2,330	20,380	1,580	1,303	2,883
Internal Trip Reduction		*15%*		*-12*	*-2*	*-14*	*-11*	*-23*	*-34*	*-767*	*-24*	*-29*	*-53*
Pass-by Reduction (Bank)		*40%*		*-45*	*-35*	*-80*	*-147*	*-146*	*-293*	*-1,270*	*-122*	*-116*	*-238*
Pass-by Reduction (Retail)		*25%*		*-38*	*-23*	*-61*	*-123*	*-132*	*-255*	*-2,742*	*-182*	*-168*	*-350*
Subtotal Retail Development		**300.0**	**kSF**	**424**	**367**	**791**	**915**	**833**	**1,748**	**15,601**	**1,252**	**990**	**2,242**
Stadium													
Baseball Stadium		**5,500**	**Seats**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**386**	**15**	**401**
Civic Use													
Performing Arts Center*		**120.0**	**kSF**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Proposed Site Trips (Without Reductions)				2,965	1,222	4,187	2,077	3,366	5,443	56,755	2,668	1,805	4,473
Total Reduced Trips				*-394*	*-202*	*-596*	*-438*	*-580*	*-1,018*	*-11,304*	*-443*	*-400*	*-843*
TOTAL PROPOSED SITE TRIPS (WITH REDUCTIONS)				**2,571**	**1,020**	**3,591**	**1,639**	**2,786**	**4,425**	**45,451**	**2,225**	**1,405**	**3,630**
Difference (Proposed – Approved)				-910	590	-320	1,093	-564	529	12,406	1,900	1,291	3,191

***The performing arts center will generate off-peak hour trips.**

Table 8 shows that the proposed development under phase II will generate approximately 3,591 new weekday morning peak hour trips, approximately 4,425 new weekday afternoon peak hour trips, 3,630 new Saturday peak hour trips and approximately 45,451 new average daily trips with the proposed Kincora development in 2015.

TRIP GENERATION (REZONING APPLICATION FULL BUILD OUT - PHASE III - 2025)

In order to calculate the trip generation for the currently designated keynote employment use and the proposed development program by 2025, the ITE's Trip Generation, 7th Edition publication was used to determine the trips into and out of the project site for the weekday morning and afternoon peak hours as well as for an entire weekday. Average daily volumes for residential developments were estimated based on Loudoun County's trip generation rates.

In addition to the new site trip estimates, trip generation reductions were considered to account for internal synergy, pass-by trips, and mode split reduction, which are listed below:

- *Pass-by trips:* A 25% reduction will be considered on proposed retail trips during the afternoon peak period only to represent traffic pulled from background traffic stream. A 40% reduction was applied to the proposed bank.
- *Internal trips:* According to the VDOT's guidelines for Chapter 527 traffic study, internal capture reduction will be considered for mixed-use land bays.
- *Mode split reduction:* A 10% reduction on proposed office and residential trips will be considered to reflect expected transit usage mode split by future public transportation within the study area. This reduction assumes associated transit commitments from the applicant for implementation.

These reductions were applied to the appropriate site trip assignment. **Tables 13** presents the new trips generated by proposed development program in 2025, respectively.

Table 13: Trip Generation (Phase III – 2025)

Land Use	ITE Code	Size	Units	Weekday							Saturday		
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
APPROVED USE													
PD-IP (0.4 FAR)													
Office Park	750	4,000.0	kSF	4,276	528	4,804	693	4,254	4,947	42,090	415	145	560
PROPOSED PLAN - MIXED USE DEVELOPMENT													
Residential Development													
Townhouses/Condos	230	1,400	DU	73	354	427	352	172	524	12,180	243	206	449
Internal Trip Reduction		*15%*		*-11*	*-54*	*-65*	*-53*	*-26*	*-79*	*-1,827*	*-37*	*-31*	*-68*
Mode Split Reduction		*10%*		*-8*	*-35*	*-43*	*-36*	*-17*	*-53*	*-1,218*	*-25*	*-20*	*-45*
Subtotal Residential Development		**1,400**	**DU**	**54**	**265**	**319**	**263**	**129**	**392**	**9,135**	**181**	**155**	**336**
Office Development													
Hotel	310	720	Rooms	289	184	473	226	199	425	6,071	282	220	502
Office Park	750	4,000.0	kSF	4,276	528	4,804	693	4,254	4,947	42,090	415	145	560
Subtotal Office Development		4,720.0	kSF	4,565	712	5,277	919	4,453	5,372	48,161	697	365	1,062

ATTACHMENT 8

Land Use	ITE Code	Size	Units	Weekday							Saturday		
				AM Peak Hour			PM Peak Hour			Daily	Peak Hour of Generator		
				In	Out	Total	In	Out	Total	Total	In	Out	Total
Internal Trip Reduction		*15%*		*-45*	*-9*	*-54*	*-17*	*-34*	*-51*	*-1,188*	*-15*	*-18*	*-33*
Mode Split Reduction		*10%*		*-457*	*-71*	*-528*	*-92*	*-446*	*-538*	*-4,817*	*-70*	*-37*	*-107*
Subtotal Office Development		**4,720.0**	**kSF**	**4,063**	**632**	**4,695**	**810**	**3,973**	**4,783**	**42,156**	**612**	**310**	**922**
Retail Development													
Shopping Center	820	409.0	kSF	223	142	365	762	825	1,587	16,966	1,125	1,038	2163
Health/Fitness Club	492	35.0	kSF	19	24	43	73	69	142	1,153	46	45	91
Drive-in Banks	912	16.0	kSF	111	87	198	366	366	732	3,175	303	291	594
High-Turnover (Sit-Down) Restaurants	932	40.0	kSF	240	221	461	267	170	437	5,086	504	296	800
Subtotal Retail Development		500.0	kSF	593	474	1,067	1,468	1,430	2,898	26,380	1,978	1,670	3,648
Internal Trip Reduction		*15%*		*-9*	*-2*	*-11*	*-9*	*-19*	*-28*	*-639*	*-15*	*-17*	*-32*
Pass-by Reduction (Bank)		*40%*		*-45*	*-35*	*-80*	*-147*	*-146*	*-293*	*-1,270*	*-122*	*-116*	*-238*
Pass-by Reduction (Retail)		*25%*		*-56*	*-36*	*-92*	*-191*	*-206*	*-397*	*-4,242*	*-282*	*-259*	*-541*
Subtotal Retail Development		**500.0**	**kSF**	**483**	**401**	**884**	**1,121**	**1,059**	**2,180**	**20,229**	**1,559**	**1,278**	**2,837**
Stadium													
Baseball Stadium		5,500	Seats	N/A	N/A	N/A	N/A	N/A	N/A	N/A	386	15	401
Civic Use													
Performing Arts Center		375	kSF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Proposed Site Trips (Without Reductions)				5,231	1,540	6,771	2,739	6,055	8,794	86,721	3,304	2,255	5,560
Total Reduced Trips				*-631*	*-242*	*-873*	*-545*	*-894*	*-1,439*	*-15,201*	*-566*	*-499*	*-1,064*
TOTAL PROPOSED SITE TRIPS (WITH REDUCTIONS)				**4,600**	**1,298**	**5,898**	**2,194**	**5,161**	**7,355**	**71,520**	**2,738**	**1,756**	**4,496**
Difference (Proposed – Approved)				-2,562	413	-2,149	926	-2,623	-1,697	-5,925	1,971	1,488	3,460

Table 13 shows that the proposed development under phase III will generate approximately 5,898 new weekday morning peak hour trips, approximately 7,355 new weekday afternoon peak hour trips, 4,496 new Saturday peak hour trips and approximately 71,520 new average daily trips with the proposed Kincora development in 2025.

ATTACHMENT 9

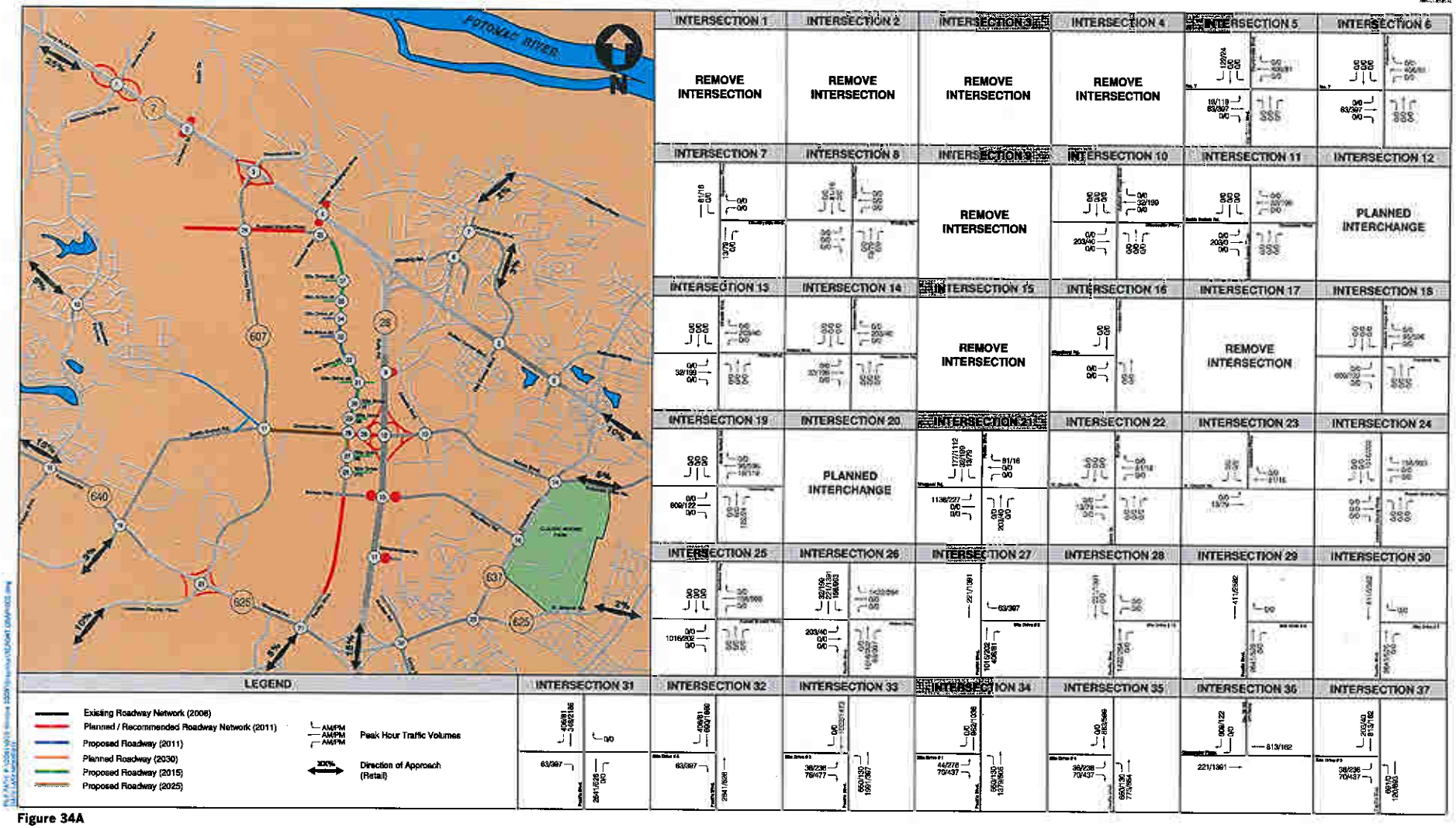


Figure 34A
Site Generated (2025) Traffic Volumes - Office Use - Weekday

Existing Conditions Capacity Analysis

Capacity analyses were performed at the intersections contained within the study area during the weekday morning and afternoon peak hours under the existing conditions. Intersection capacity analyses were performed using *Synchro, version 6.0* based on the latest Highway Capacity Manual (HCM 2000) data and methodology. As agreed upon in the scoping meeting, roadway link and interchange capacity analyses were not performed in this study.

The results of the intersection capacity analyses are presented in **Table 1**, and are expressed in terms of level of service (LOS) and delay (seconds per vehicle). A description of the different LOS and delay and the detailed analysis worksheets for the existing conditions are included in the Technical Appendix.

Table 1: Existing (2008) Intersection Capacity Analysis

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
1	Route 7 and Ashburn Village Blvd./Janelia Farm Blvd.						
	Overall (Signalized)	**F**	**156.3**	**E**	**66.4**	--	--
	Eastbound	C	27.8	D	40.9	--	--
	Westbound	C	29.8	E	62.2	--	--
	Northbound	F	86.6	F	109.7	--	--
	Southbound	F	817.2	F	167.6	--	--
	Overall Mitigations – Change PM cycle length and adjust AM and PM signal timings	E	55.4	C	33.3	--	--
	Eastbound – Add 4th through lane.	C	28.6	C	26.3	--	--
	Westbound – Add 4th through lane and allow permitted + overlap right turn movement.	C	26.0	C	32.9	--	--
	Northbound – Add 2nd left turn bay; restripe left/thru shared lane to thru lane only; change signal phasing.	F	174.8	D	47.5	--	--
	Southbound – Restripe right turn lane to thru/right shared lane and change signal phasing.	F	126.1	D	51.8	--	--
2	Route 7 and Lexington Drive/Smith Circle						
	Overall (Signalized)	**E**	**64.1**	**F**	**119.0**	--	--
	Eastbound	D	52.0	F	99.7	--	--
	Westbound	C	22.2	F	140.3	--	--
	Northbound	F	149.0	B	14.3	--	--
	Southbound	F	93.3	F	84.8	--	--
	Overall Mitigations – Change PM cycle length and adjust AM and PM signal timings	**D**	**51.3**	**D**	**52.8**	--	--
	Eastbound – Add 4th through lane and allow permitted + overlap right turn movement.	C	21.5	D	53.0	--	--
	Westbound – Add 4th through lane and allow permitted + overlap right turn movement.	D	44.1	D	54.8	--	--
	Northbound	F	127.0	B	14.2	--	--
	Southbound	F	92.0	F	88.9	--	--

ATTACHMENT 10

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
3	Route 7 and Loudoun County Parkway/Presidential Dr.						
	Overall (Signalized)	F	91.0	F	144.4	D	36.0
	Eastbound	F	124.4	D	39.4	C	26.8
	Westbound	C	21.6	F	111.1	D	38.9
	Northbound	D	43.2	F	722.0	F	80.3
	Southbound	F	86.9	F	183.1	F	85.2
	Overall Mitigations – Change PM cycle length and adjust AM and PM signal timings	D	46.1	E	75.7	B	14.6
	Eastbound – Add 4th through lane.	D	54.2	D	53.0	B	13.3
	Westbound – Add 4th through lane.	C	25.6	D	46.0	B	13.3
	Northbound	D	40.3	F	322.1	C	27.7
	Southbound – Allow permitted + overlap right turn movement	F	70.1	F	94.4	D	54.9
4	Route 7 and Richfield Way/George Washington Blvd.						
	Overall (Signalized)	F	120.3	F	237.6	--	--
	Eastbound	F	175.3	F	340.0	--	--
	Westbound	C	24.5	F	176.2	--	--
	Northbound	F	90.9	F	84.0	--	--
	Southbound	F	102.0	F	107.2	--	--
	Overall Mitigations – Change PM cycle length and adjust AM and PM signal timings	C	26.5	F	59.8	--	--
	Eastbound – Add 2nd left and 4th through lane and allow permitted + overlap right turn movement.	A	5.4	D	54.4	--	--
	Westbound – Add 4th through lane and allow permitted + overlap right turn movement.	B	12.3	D	54.9	--	--
	Northbound	F	85.6	F	82.2	--	--
	Southbound – Add 2nd left turn bay.	F	268.2	F	136.3	--	--
5	Route 7 and City Center Blvd./Countryside Blvd.						
	Overall (Signalized)	D	39.6	E	65.8	--	--
	Eastbound	D	42.7	D	43.9	--	--
	Westbound	C	22.6	F	90.5	--	--
	Northbound	D	42.4	D	40.2	--	--
	Southbound	E	63.7	E	62.3	--	--
	Overall Mitigation – Change AM and PM cycle lengths	C	30.5	D	43.7	--	--
	Eastbound – Add 4th through lane.	C	30.9	D	46.0	--	--
	Westbound – Add 4th through lane.	B	20.0	D	42.7	--	--
	Northbound	C	34.5	C	33.0	--	--
	Southbound	D	51.7	D	51.1	--	--
6	Route 7 and Loudoun Tech Drive/Palisade Parkway						
	Overall (Signalized)	C	25.1	D	51.6	--	--
	Eastbound	B	15.6	C	34.8	--	--
	Westbound	C	22.6	D	50.1	--	--
	Northbound	E	78.1	F	83.8	--	--
	Southbound	E	74.5	E	79.1	--	--
	Overall Mitigation – Change AM and PM cycle lengths	B	19.8	D	42.5	--	--
	Eastbound – Add 4th through lane.	B	11.7	D	54.5	--	--

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
	Westbound – Add 4th through lane.	B	19.3	C	31.5	--	--
	Northbound – Allow permitted + overlap right turn movement.	E	58.7	D	39.4	--	--
	Southbound – Allow permitted + overlap right turn movement.	E	59.4	D	47.6	--	--
7	Algonkian Parkway and Countryside Boulevard						
	Overall (Signalized)	**A**	**7.8**	**B**	**10.2**	--	--
	Westbound	B	12.5	B	14.8	--	--
	Northbound	B	11.3	B	14.2	--	--
	Southbound	A	3.5	A	4.5	--	--
8	Algonkian Parkway and Winding Road/Sutherlin Lane						
	Overall (Two-Way Stop Controlled)	**A**	**7.7**	**C**	**21.0**	--	--
	Eastbound Approach	C	19.9	F	58.2	--	--
	Westbound Approach	F	51.3	F	317.7	--	--
	Northbound Left Turn	A	1.1	B	10.0	--	--
	Southbound Left Turn	A	8.1	B	10.1	--	--
	Overall Mitigation – Install a traffic signal	**B**	**12.7**	**A**	**9.1**	--	--
	Eastbound	C	33.9	C	31.8	--	--
	Westbound	D	35.3	D	35.7	--	--
	Northbound	A	5.0	A	5.4	--	--
	Southbound	A	7.0	A	6.3	--	--
9	Route 28 and Dulles Center Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
10	Ashburn Village Boulevard and Gloucester Parkway						
	Overall (Signalized)	**C**	**23.4**	**C**	**27.5**	--	--
	Eastbound	C	22.1	B	16.7	--	--
	Westbound	C	23.4	C	23.8	--	--
	Northbound	B	18.9	C	31.3	--	--
	Southbound	C	30.7	C	29.9	--	--
	Overall Mitigation – Adjust AM and PM signal timings	**C**	**22.9**	**C**	**22.6**	--	--
	Eastbound	C	21.8	B	15.5	--	--
	Westbound	C	22.9	C	22.9	--	--
	Northbound – Add 2nd left turn bay.	B	18.9	C	22.6	--	--
	Southbound	C	29.0	C	25.6	--	--
11	Loudoun County Parkway and Smith Switch Road						
	Overall (Two-Way Stop Controlled)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound Approach	C	22.1	E	39.8	B	10.3
	Northbound Approach	A	0.7	A	0.5	A	1.2
	Southbound Approach	A	0.0	A	0.0	A	0.0
12	Route 28 and Nokes Boulevard						
	Overall (Signalized)	**B**	**10.8**	**F**	**88.0**	**B**	**17.7**
	Westbound	B	17.5	D	38.0	D	44.1
	Northbound	A	5.5	F	109.4	A	8.3
	Southbound	B	12.9	E	67.7	B	11.6
	Overall Mitigation – Adjust PM signal timings	**B**	**13.2**	**F**	**102.5**	**C**	**30.0**
	Westbound	B	17.5	F	444.6	D	36.6
	Northbound	B	13.0	D	52.6	C	25.3
	Southbound	B	12.9	D	53.1	C	34.0

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
13	Nokes Boulevard and Atlantic Boulevard						
	Overall (Signalized)	**C**	**22.1**	**C**	**26.4**	--	--
	Eastbound	B	13.3	C	25.9	--	--
	Westbound	C	20.2	C	27.1	--	--
	Northbound	C	32.4	C	28.4	--	--
	Southbound	C	28.2	C	21.1	--	--
14	Nokes Boulevard and Cascade Pkwy./Potomac View Rd.						
	Overall (Signalized)	**C**	**27.0**	**D**	**35.9**	--	--
	Eastbound	D	38.8	D	46.9	--	--
	Westbound	D	40.5	E	61.2	--	--
	Northbound	C	21.7	C	29.1	--	--
	Southbound	C	23.8	C	28.4	--	--
	Overall Mitigation – Adjust PM signal timings	**C**	**27.0**	**C**	**33.6**	--	--
	Eastbound	D	38.8	D	47.8	--	--
	Westbound	D	40.5	D	41.7	--	--
	Northbound	C	21.7	C	29.2	--	--
	Southbound	C	23.8	C	27.4	--	--
15	Route 28 and Severn Way						
	Overall (Signalized)	**E**	**61.7**	**F**	**128.3**	--	--
	Eastbound	D	38.8	D	49.7	--	--
	Westbound	D	36.3	E	66.2	--	--
	Northbound	D	53.1	F	197.7	--	--
	Southbound	E	72.1	B	12.5	--	--
	Overall Mitigation – Adjust AM and PM signal timings	**B**	**17.2**	**E**	**70.9**	--	--
	Eastbound	D	52.0	E	75.1	--	--
	Westbound	F	182.4	F	498.3	--	--
	Northbound Add 2nd left turn lane	A	3.3	D	51.8	--	--
	Southbound	B	11.8	B	10.1	--	--
16	Potomac View Road and Woodland Road						
	Overall (Signalized)	**A**	**8.1**	**B**	**12.6**	--	--
	Eastbound	C	25.5	C	23.4	--	--
	Northbound	A	4.1	A	8.1	--	--
	Southbound	A	9.6	B	14.5	--	--
17	Route 28 and Steeplechase Drive						
	Overall (Signalized)	**D**	**41.1**	**E**	**61.0**	--	--
	Eastbound	D	45.6	D	54.3	--	--
	Westbound	D	44.8	F	204.0	--	--
	Northbound	C	20.8	F	83.7	--	--
	Southbound	E	56.4	A	8.0	--	--
	Overall Mitigation – Adjust AM and PM signal timings	**C**	**28.1**	**D**	**54.2**	--	--
	Eastbound – Change signal phasing.	D	46.3	E	61.9	--	--
	Westbound – Restripe shared left/through to through only; change signal phasing.	D	51.4	F	328.0	--	--
	Northbound – Allow permitted + overlap right turn movement.	C	20.4	D	52.8	--	--
	Southbound	D	33.1	B	10.9	--	--
18	Farmwell Road and Ashburn Village Boulevard						
	Overall (Signalized)	**D**	**47.8**	**F**	**131.3**	--	--
	Eastbound	D	40.9	D	46.0	--	--

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Westbound	C	33.4	F	143.9	--	--
	Northbound	D	54.5	D	52.8	--	--
	Southbound	E	57.2	F	230.4	--	--
	Overall Mitigation – Adjust AM and PM signal timings	**C**	**34.5**	**D**	**46.9**	--	--
	Eastbound – Add 3rd through lane.	C	30.9	D	36.2	--	--
	Westbound – Add 3rd through lane and allow free-flow right turn movement.	B	18.7	D	46.5	--	--
	Northbound – Allow permitted + overlap right turn movement.	D	48.7	D	52.3	--	--
	Southbound – Add 2nd through lane and allow permitted + overlap right turn movement.	D	39.9	D	54.0	--	--
19	Farmwell Road and Waxpool Road/Smith Switch Road						
	Overall (Signalized)	**E**	**61.7**	**E**	**56.5**	--	--
	Eastbound	C	26.6	B	16.6	--	--
	Westbound	E	62.5	C	31.1	--	--
	Northbound	F	183.7	F	218.4	--	--
	Southbound	F	91.7	F	113.8	--	--
	Overall Mitigation – Change AM and PM cycle lengths	**C**	**23.7**	**C**	**27.3**	--	--
	Eastbound – Add 3rd through lane.	C	24.4	C	33.0	--	--
	Westbound – Add 3rd through lane.	C	23.8	C	24.1	--	--
	Northbound – Allow free-flow right turn movement.	B	12.2	B	16.4	--	--
	Southbound	D	43.4	D	52.2	--	--
20	Waxpool Road and Loudoun County Parkway						
	Overall (Signalized)	**F**	**339.8**	**F**	**178.6**	**D**	**40.0**
	Eastbound	D	41.3	C	31.4	D	41.1
	Westbound	E	76.9	F	192.0	C	30.5
	Northbound	F	927.8	F	338.5	E	58.0
	Southbound	F	433.7	F	179.7	D	53.6
	Overall Mitigations – Change PM cycle length and adjust AM and PM signal timings	**D**	**36.0**	**D**	**39.3**	**C**	**22.4**
	Eastbound – Add 3rd through lane.	D	47.4	D	43.9	B	19.9
	Westbound	C	28.0	D	38.0	C	20.7
	Northbound – Allow free flow right turn movement.	C	22.3	C	31.5	B	13.2
	Southbound – Add 2nd left turn bay and restripe left/thru shared lane to thru lane only.	D	52.8	D	47.9	D	45.9
21	Waxpool Road and Pacific Boulevard						
	Overall (Signalized)	**F**	**85.3**	**E**	**78.1**	**D**	**42.8**
	Eastbound	F	138.7	C	31.8	E	69.2
	Westbound	C	28.6	D	44.6	B	17.7
	Northbound	E	61.2	F	284.8	E	72.0
	Southbound	E	62.9	E	79.6	D	37.7
	Overall Mitigation – Change AM and PM cycle lengths	**D**	**36.0**	**D**	**41.4**	**D**	**38.4**
	Eastbound – Add 4th through lane	D	46.8	C	28.6	D	53.6
	Westbound	C	23.0	D	48.7	B	14.0
	Northbound – Convert right turn to free flow	B	16.8	D	35.7	D	40.3

Int. No.	Intersection (Approach/Movement)	Existing Conditions (2008)					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Southbound	D	47.4	D	51.6	D	50.3
22	Church Road and Davis Drive/Ruritan Circle						
	Overall (Signalized)	**F**	**595.8**	**F**	**665.9**	--	--
	Eastbound	F	1527.2	F	1441.8	--	--
	Westbound	E	57.5	C	33.1	--	--
	Northbound	D	38.0	F	81.9	--	--
	Southbound	D	38.3	D	39.4	--	--
	Overall Mitigation – Adjust AM and PM signal timings	**C**	**20.5**	**D**	**36.2**	--	--
	Eastbound – Add 2nd through lane.	C	26.2	D	43.7	--	--
	Westbound – Add 2nd through lane.	B	14.1	C	24.3	--	--
	Northbound – Allow permitted + overlap right turn movement.	C	29.0	D	42.7	--	--
	Southbound	D	36.6	D	48.3	--	--
23	Church Road and Cascades Parkway						
	Overall (Signalized)	**B**	**17.1**	**D**	**45.9**	--	--
	Eastbound	B	15.0	D	54.8	--	--
	Westbound	B	14.4	C	29.7	--	--
	Southbound	C	21.7	D	51.0	--	--

Note: N/A means not applicable.

According to the Loudoun County's Facilities Standards Manual (FSM), it is desirable to achieve an overall and per approach level of service (LOS) D or better at each intersection. The results presented in **Table 3** show that most of the study intersections are currently operating at unacceptable conditions. The following mitigation measures would be required to meet the desired LOS criteria set forth by the County under the existing conditions:

- *Intersection of Route 7 with Ashburn Village Boulevard/Janelia Farm Boulevard:*
  - Add fourth eastbound and westbound through lane.
  - Add second northbound left turn bay.
  - Restripe northbound left/through shared lane to through lane only.
  - Restripe southbound right turn lane to through/right shared lane.
  - Allow permitted plus overlap right turn movement in the westbound approach.
  - Adjust signal phasing in the northbound and southbound approaches.
  - Change PM cycle length and adjust AM and PM signal timings.
- *Intersection of Route 7 with Lexington Drive/Smith Circle:*
  - Add fourth eastbound and westbound through lane.
  - Allow permitted plus overlap right turn movement in the eastbound and westbound approaches.

- Change PM cycle length and adjust AM and PM signal timings.

- *Intersection of Route 7 with Loudoun County Parkway/Presidential Drive:*
  - Add fourth eastbound and westbound through lane.
  - Allow permitted plus overlap right turn movement in the southbound approach.
  - Change PM cycle length and adjust AM and PM signal timings.
- *Intersection of Route 7 with Richfield Way/George Washington Boulevard:*
  - Add fourth eastbound and westbound through lane.
  - Add second southbound left turn bay.
  - Restripe southbound left/through/right shared lane to right/through shared lane.
  - Add second eastbound left turn bay.
  - Allow permitted plus overlap right turn movement in the eastbound and westbound approaches.
  - Change PM cycle length and adjust AM and PM signal timings.
- *Intersection of Route 7 with City Center Boulevard/Countryside Boulevard:*
  - Add fourth eastbound and westbound through lane.
  - Change AM and PM cycle lengths and signal timings.
- *Intersection of Route 7 with Loudoun Tech Drive/Palisade Parkway:*
  - Add fourth eastbound and westbound through lane.
  - Allow permitted plus overlap right turn movement in the northbound and southbound approaches.
  - Change AM and PM cycle lengths and signal timings.
- *Intersection of Algonkian Parkway with Winding Road/Sutherlin Lane:*
  - Install a traffic signal.
- *Intersection of Ashburn Village Boulevard with Gloucester Parkway:*
  - Add second northbound left turn bay.
  - Adjust AM and PM signal timings.
- *Intersection of Route 28 with Nokes Boulevard:*
  - Adjust PM signal timings.
- *Intersection of Cascades Parkway with Nokes Boulevard:*
  - Adjust PM cycle length signal timings.

- *Intersection of Route 28 with Severn Way:*
  - Add second northbound left turn bay.
  - Adjust AM and PM signal timings.
- *Intersection of Route 28 with Steeplechase Drive:*
  - Adjust signal phasing in the eastbound and westbound approaches.
  - Restripe westbound left/through shared lane to through lane only.
  - Adjust AM and PM signal timings.
- *Intersection of Farmwell Road with Ashburn Village Boulevard:*
  - Add third eastbound and westbound through lane.
  - Add second southbound through lane.
  - Allow free-flow right turn movement in the westbound approach.
  - Allow permitted plus overlap right turn movement in the northbound and southbound approaches.
  - Adjust AM and PM signal timings.
- *Intersection of Farmwell Road with Smith Switch Road/Waxpool Road:*
  - Add third eastbound and westbound through lane.
  - Allow free-flow right turn movement in the northbound approach.
  - Change AM and PM cycle lengths and signal timings.
- *Intersection of Waxpool Road with Loudoun County Parkway:*
  - Add third eastbound through lane.
  - Add second southbound left turn bay.
  - Restripe southbound left/through shared lane to through lane only.
  - Allow free-flow right turn movement in the northbound approach.
  - Change AM and PM cycle lengths and signal timings.
- *Intersection of Waxpool Road with Pacific Boulevard:*
  - Add fourth eastbound through lane.
  - Convert northbound right turn to free flow
  - Change AM and PM cycle lengths and signal timings.
- *Intersection of Church Road with Davis Drive/Ruritan Circle:*
  - Add second eastbound and westbound through lane.

- Allow permitted plus overlap right turn movement in the northbound approach.
- Adjust AM and PM signal timings.

It should be noted that the mitigation measures recommended at most of the intersections on Route 7 will not meet the overall and per approach LOS criteria set forth by the County due to the high volume demand on Route 7, existing proffers, and public sector funding resources on this major arterial. However, all major street approaches on Route 7 will operate at acceptable levels of service with the recommended improvements listed above, but some of the minor streets will operate at unacceptable conditions. **Figures 6A and 6B** illustrate graphically the intersection capacity analysis results. **Figure 7** shows the recommended improvements under the existing conditions.

Table 4: Future Conditions with Development (Rezoning Application - Phase I - 2011) Intersection Capacity Analysis

Int. No.	Intersection (Approach/Movement)	Future Conditions (2011) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
1	Route 7 and Ashburn Village Blvd./Janelia Farm Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
2	Route 7 and Lexington Drive/Smith Circle						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
3	Route 7 and Loudoun County Parkway/Presidential Dr.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
4	Route 7 and Richfield Way/George Washington Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
5	Route 7 and City Center Blvd./Countryside Blvd.						
	Overall (Signalized)	**C**	**30.2**	**D**	**37.6**	--	--
	Eastbound	C	30.4	D	37.2	--	--
	Westbound	C	23.7	D	35.4	--	--
	Northbound	C	30.4	C	34.7	--	--
	Southbound	D	51.4	D	54.4	--	--
6	Route 7 and Loudoun Tech Drive/Palisade Parkway						
	Overall (Signalized)	**C**	**22.2**	**D**	**40.0**	--	--
	Eastbound	C	20.3	D	37.7	--	--
	Westbound	B	15.9	D	41.4	--	--
	Northbound	D	54.3	D	37.6	--	--
	Southbound	D	52.3	D	46.6	--	--
7	Algonkian Parkway and Countryside Boulevard						
	Overall (Signalized)	**A**	**6.5**	**A**	**8.9**	--	--
	Westbound	B	13.1	B	12.9	--	--
	Northbound	A	9.3	B	12.5	--	--
	Southbound	A	2.6	A	3.6	--	--
8	Algonkian Parkway and Winding Road/Sutherlin Lane						
	Overall (Signalized)	**B**	**12.5**	**A**	**7.8**	--	--
	Eastbound	C	34.3	C	32.4	--	--
	Westbound	D	35.6	D	36.0	--	--
	Northbound	A	4.7	A	4.6	--	--
	Southbound	A	6.8	A	5.6	--	--
9	Route 28 and Dulles Center Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
10	Ashburn Village Boulevard and Gloucester Parkway						
	Overall (Signalized)	**C**	**22.0**	**C**	**23.3**	--	--
	Eastbound	B	18.3	B	15.9	--	--
	Westbound	C	23.0	C	20.6	--	--
	Northbound	B	20.0	C	26.1	--	--
	Southbound	C	28.1	C	25.5	--	--
11	Loudoun County Parkway and Smith Switch Road						
	Overall (Signalized)	**A**	**6.5**	**C**	**26.3**	**A**	**2.1**
	Eastbound	D	46.2	D	54.5	D	53.0
	Northbound	A	4.6	D	38.4	A	1.6
	Southbound	A	6.1	A	7.1	A	1.4

ATTACHMENT 11

Int. No.	Intersection (Approach/Movement)	Future Conditions (2011) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
12	Route 28 and Nokes Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
13	Nokes Boulevard and Atlantic Boulevard						
	Overall (Signalized)	**C**	**32.9**	**C**	**30.3**	--	--
	Eastbound	C	22.2	C	32.8	--	--
	Westbound	C	28.7	D	42.7	--	--
	Northbound	D	50.8	C	26.4	--	--
	Southbound	D	37.0	B	17.8	--	--
14	Nokes Boulevard and Cascade Pkwy./Potomac View Rd.						
	Overall (Signalized)	**C**	**25.2**	**D**	**35.2**	--	--
	Eastbound	D	40.9	D	47.6	--	--
	Westbound	D	36.9	D	49.1	--	--
	Northbound	B	18.9	C	28.8	--	--
	Southbound	C	21.9	C	28.8	--	--
15	Route 28 and Severn Way						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
16	Potomac View Road and Woodland Road						
	Overall (Signalized)	**A**	**7.4**	**B**	**15.4**	--	--
	Eastbound	C	23.0	C	28.8	--	--
	Northbound	A	3.7	A	9.5	--	--
	Southbound	A	9.6	B	19.5	--	--
17	Route 28 and Steeplechase Drive						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
18	Farmwell Road and Ashburn Village Boulevard						
	Overall (Signalized)	**C**	**34.8**	**E**	**57.0**	--	--
	Eastbound	D	36.7	D	37.8	--	--
	Westbound	B	16.9	E	56.7	--	--
	Northbound	D	49.4	D	49.2	--	--
	Southbound	D	39.0	F	81.0	--	--
	Overall Mitigation – Change AM and PM signal timing and cycle lengths	**C**	**34.9**	**D**	**52.1**	--	--
	Eastbound	D	36.0	D	48.9	--	--
	Westbound	B	16.7	D	54.1	--	--
	Northbound	D	49.5	D	50.6	--	--
	Southbound	D	40.1	D	50.9	--	--
19	Farmwell Road and Waxpool Road/Smith Switch Road						
	Overall (Signalized)	**C**	**22.6**	**C**	**31.5**	--	--
	Eastbound	C	23.0	D	41.3	--	--
	Westbound	B	19.5	C	27.9	--	--
	Northbound	C	21.1	B	15.0	--	--
	Southbound	D	43.1	D	50.0	--	--
20	Waxpool Road and Loudoun County Parkway						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
21	Waxpool Road and Pacific Boulevard						
	Overall (Signalized)	**E**	**77.1**	**D**	**49.9**	**F**	**139.6**
	Eastbound	F	120.5	F	99.3	F	312.2
	Westbound	C	24.0	C	30.1	C	20.6
	Northbound	D	43.2	C	28.8	D	50.4
	Southbound	D	39.8	C	25.1	C	21.2

Int. No.	Intersection (Approach/Movement)	Future Conditions (2011) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
	Overall Mitigation – Change AM and PM signal timing and cycle lengths	**C**	**30.8**	**D**	**40.0**	**C**	**34.7**
	Eastbound	C	32.3	C	28.5	D	36.5
	Westbound	C	26.6	D	48.9	D	38.0
	Northbound	D	43.2	D	41.5	D	49.6
	Southbound	D	37.9	C	33.4	C	25.6
22	Church Road and Davis Drive/Ruritan Circle						
	Overall (Signalized)	**C**	**22.5**	**D**	**39.3**	--	--
	Eastbound	C	33.0	D	54.2	--	--
	Westbound	A	9.4	B	14.7	--	--
	Northbound	C	29.3	D	41.7	--	--
	Southbound	D	37.4	D	48.3	--	--
23	Church Road and Cascades Parkway						
	Overall (Signalized)	**B**	**17.8**	**D**	**38.1**	--	--
	Eastbound	B	15.7	D	35.2	--	--
	Westbound	B	15.9	D	43.3	--	--
	Southbound	C	22.3	D	36.9	--	--
24	Loudoun County Parkway and Russell Branch Parkway						
	Overall (Signalized)	**B**	**16.6**	**C**	**20.8**	--	--
	Eastbound	C	28.7	C	29.1	--	--
	Westbound	C	27.2	C	25.3	--	--
	Northbound	B	15.7	B	19.4	--	--
	Southbound	B	15.0	B	18.5	--	--
26	Gloucester Parkway and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	F	259.8	F	61.0	F	211.4
	Northbound	A	0.0	A	0.0	A	0.0
	Southbound	A	7.4	C	17.1	A	9.7
	Overall Mitigation – Install Signal	**C**	**21.5**	**B**	**13.3**	**B**	**16.3**
	Westbound	C	28.2	A	8.9	C	20.9
	Northbound	C	23.5	C	21.6	C	22.5
	Southbound – Add left turn lane.	A	4.7	B	12.9	A	7.0
34	Site Driveway #1 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	A	9.5	D	27.1	B	13.3
	Northbound	A	9.6	A	8.2	B	12.7
	Southbound	A	0.0	A	0.0	A	0.0
33	Site Driveway #2 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	B	11.0	F	496.3	C	15.7
	Northbound	A	9.3	B	10.6	A	6.3
	Southbound	A	0.0	A	0.0	A	0.0
	Overall Mitigation – Add Signal	**A**	**2.2**	**D**	**40.5**	**A**	**2.7**
	Eastbound – Add right turn lane.	A	6.5	D	46.8	B	17.1
	Northbound –Add left turn lane.	A	0.4	C	26.8	A	0.6
	Southbound	A	8.3	D	48.2	A	4.1
36	Gloucester Parkway and Route 28 SB Off-Ramp						
	Overall (Signalized)	**A**	**5.5**	**A**	**2.1**	**A**	**4.5**
	Eastbound	A	0.0	A	0.0	A	0.0

Int. No.	Intersection (Approach/Movement)	Future Conditions (2011) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Westbound	B	11.2	B	11.1	B	11.1
	Southbound	A	5.4	A	4.3	A	4.9

Note: N/A means not applicable.

As mentioned before, it is desirable to achieve an overall and per approach LOS D or better at each intersection. Assuming that the mitigation measures recommended in the future background 2011 conditions were in place, the results presented in **Table 4** show that some of the study intersections would operate at unacceptable levels of service under the total future 2011 conditions with this planned interchange. The following improvements would be required to meet the desired LOS criteria set forth by the County under this scenario:

- *Intersection of Farmwell Road with Ashburn Village Boulevard:*
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Waxpool Road with Pacific Boulevard:*
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Gloucester Parkway with Pacific Boulevard:*
  - Analyzed Gloucester Parkway as a four-lane, median divided, rural highway with left and right turn lanes provided at this intersection.
  - Analyzed Pacific Boulevard as a two-lane, local access, rural road.
  - Install a traffic signal.
  - Add southbound left turn bay.
- *Intersection of Pacific Boulevard with Future Site Drive #2:*
  - Analyzed Pacific Boulevard as a two-lane, local access, rural road.
  - Add Traffic Signal.
  - Add northbound left turn lane.
  - Add eastbound right turn lane.

As mentioned earlier in the report, no analyses were performed at the planned and recommended grade-separated interchanges. **Figures 13A and B** illustrate graphically the intersection capacity analysis results. **Figure 14** shows the recommended improvements under the total future 2011 conditions.

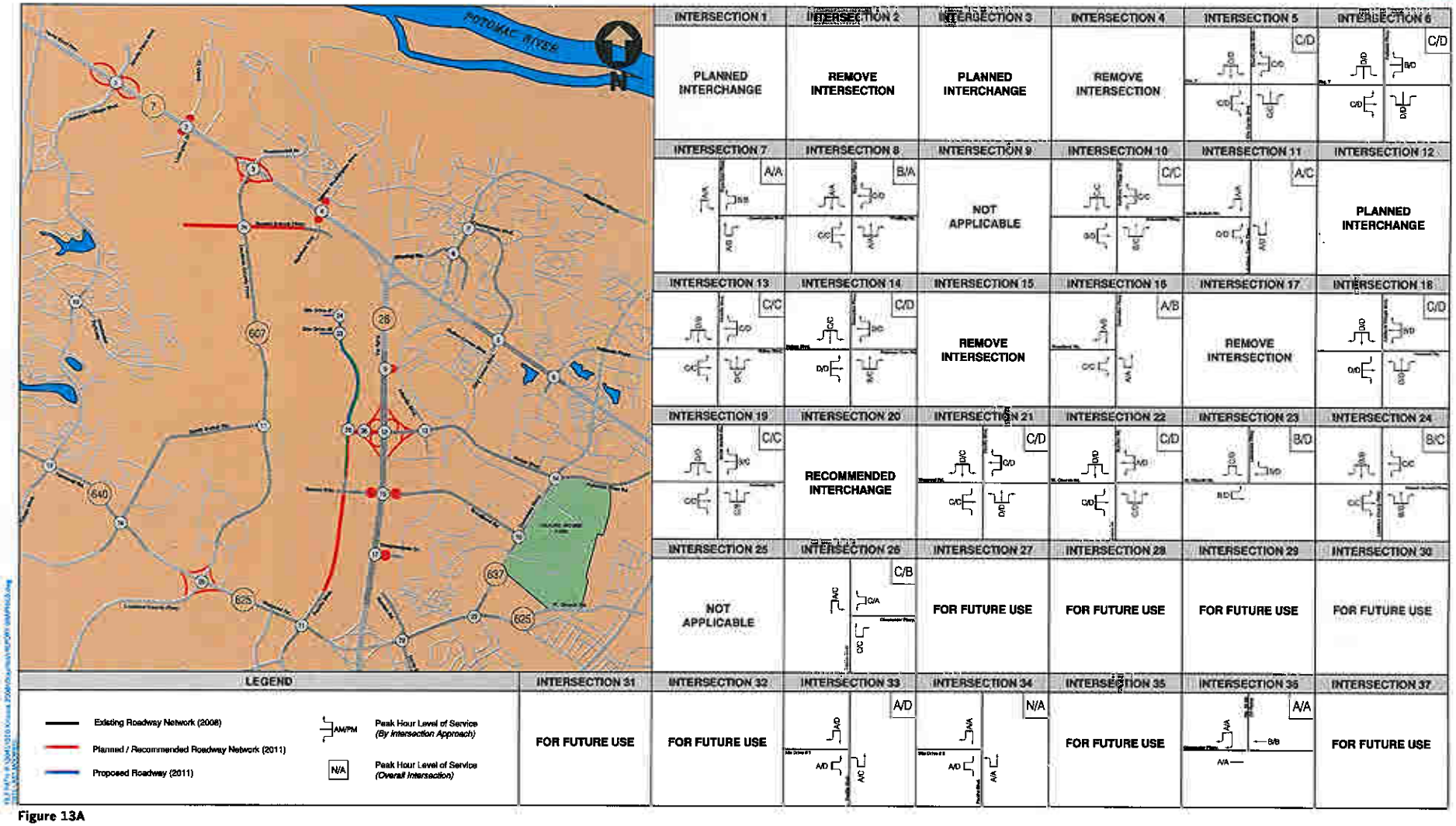


Figure 13A
Future Conditions with Development (2011) Peak Hour Levels of Service - Weekday

Table 9: Total Future (2015) Intersection Capacity Analysis (Rezoning Application – Phase II)

Int. No.	Intersection (Approach/Movement)	Future Conditions (2015) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
1	Route 7 and Ashburn Village Blvd./Janelia Farm Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
2	Route 7 and Lexington Drive/Smith Circle						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
3	Route 7 and Loudoun County Parkway/Presidential Dr.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
4	Route 7 and Richfield Way/George Washington Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
5	Route 7 and City Center Blvd./Countryside Blvd.						
	Overall (Signalized)	**C**	**34.8**	**D**	**44.1**	--	--
	Eastbound	D	36.6	D	47.9	--	--
	Westbound	C	28.8	D	40.0	--	--
	Northbound	C	30.4	D	39.0	--	--
	Southbound	D	50.8	D	53.4	--	--
6	Route 7 and Loudoun Tech Drive/Palisade Parkway						
	Overall (Signalized)	**C**	**22.3**	**C**	**33.0**	--	--
	Eastbound	C	21.5	C	29.1	--	--
	Westbound	B	17.9	C	30.8	--	--
	Northbound	D	48.3	D	45.7	--	--
	Southbound	D	44.8	D	51.5	--	--
7	Algonkian Parkway and Countryside Boulevard						
	Overall (Signalized)	**A**	**6.5**	**A**	**9.0**	--	--
	Westbound	B	13.1	B	13.3	--	--
	Northbound	A	9.3	B	12.7	--	--
	Southbound	A	2.6	A	3.7	--	--
8	Algonkian Parkway and Winding Road/Sutherlin Lane						
	Overall (Signalized)	**B**	**12.4**	**A**	**7.8**	--	--
	Eastbound	C	34.3	C	32.4	--	--
	Westbound	D	35.6	D	36.0	--	--
	Northbound	A	4.8	A	4.7	--	--
	Southbound	A	6.9	A	5.6	--	--
9	Route 28 and Dulles Center Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
10	Ashburn Village Boulevard and Gloucester Parkway						
	Overall (Signalized)	**C**	**27.7**	**C**	**34.3**	--	--
	Eastbound	C	24.0	C	21.1	--	--
	Westbound	C	29.2	C	29.3	--	--
	Northbound	C	27.3	D	48.3	--	--
	Southbound	C	32.2	C	27.8	--	--
11	Loudoun County Parkway and Smith Switch Road						
	Overall (Signalized)	**A**	**8.6**	**C**	**21.7**	**A**	**5.4**
	Eastbound	C	31.9	D	47.7	C	20.4
	Northbound	A	9.0	C	34.1	A	4.6
	Southbound	A	5.4	A	6.3	A	4.3
12	Route 28 and Nokes Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

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Int. No.	Intersection (Approach/Movement)	Future Conditions (2015) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
13	Nokes Boulevard and Atlantic Boulevard						
	Overall (Signalized)	**C**	**33.7**	**C**	**32.1**	--	--
	Eastbound	C	26.7	C	37.8	--	--
	Westbound	C	29.2	D	47.3	--	--
	Northbound	D	51.5	C	26.5	--	--
	Southbound	C	34.8	B	15.6	--	--
14	Nokes Boulevard and Cascade Pkwy./Potomac View Rd.						
	Overall (Signalized)	**C**	**27.6**	**D**	**36.5**	--	--
	Eastbound	D	39.2	D	40.3	--	--
	Westbound	D	37.6	D	49.9	--	--
	Northbound	C	21.0	C	32.3	--	--
	Southbound	C	24.2	C	30.3	--	--
15	Route 28 and Severn Way						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
16	Potomac View Road and Woodland Road						
	Overall (Signalized)	**A**	**7.9**	**B**	**16.1**	--	--
	Eastbound	C	22.4	C	30.3	--	--
	Northbound	A	3.8	B	10.0	--	--
	Southbound	B	10.9	C	20.2	--	--
17	Route 28 and Steeplechase Drive						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
18	Farmwell Road and Ashburn Village Boulevard						
	Overall (Signalized)	**D**	**51.3**	**E**	**73.0**	--	--
	Eastbound	C	30.1	D	37.6	--	--
	Westbound	B	17.5	E	70.9	--	--
	Northbound	D	52.6	D	53.0	--	--
	Southbound	F	96.4	F	118.1	--	--
	Overall Mitigation – Change signal timing and cycle length	**D**	**35.8**	**D**	**54.4**	--	--
	Eastbound	D	36.3	D	52.9	--	--
	Westbound	B	16.4	D	54.7	--	--
	Northbound	D	50.1	D	55.0	--	--
	Southbound	D	44.9	D	54.7	--	--
19	Farmwell Road and Waxpool Road/Smith Switch Road						
	Overall (Signalized)	**C**	**26.7**	**D**	**38.2**	--	--
	Eastbound	C	29.3	D	51.5	--	--
	Westbound	C	20.3	C	33.0	--	--
	Northbound	C	24.8	B	15.6	--	--
	Southbound	D	51.1	D	51.3	--	--
20	Waxpool Road and Loudoun County Parkway						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
21	Waxpool Road and Pacific Boulevard						
	Overall (Signalized)	**E**	**70.6**	**F**	**100.9**	**F**	**81.6**
	Eastbound	F	105.5	F	176.3	F	138.2
	Westbound	C	29.9	E	65.8	D	49.2
	Northbound	E	55.1	F	91.4	E	58.4
	Southbound	C	25.0	D	46.7	C	25.9
	Overall Mitigation – Adjust signal timing and cycle length	**D**	**43.7**	**E**	**71.3**	**D**	**46.0**

Int. No.	Intersection (Approach/Movement)	Future Conditions (2015) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Eastbound – Add 3rd left turn lane and convert right turn lane to free flow	D	47.7	D	45.2	D	50.7
	Westbound	C	37.0	F	110.8	C	33.6
	Northbound	D	53.5	D	48.4	D	53.1
	Southbound	D	39.9	D	42.8	D	50.5
22	Church Road and Davis Drive/Ruritan Circle						
	Overall (Signalized)	**C**	**27.5**	**D**	**43.5**	--	--
	Eastbound	D	43.9	E	59.1	--	--
	Westbound	A	9.7	B	15.7	--	--
	Northbound	C	29.3	D	50.7	--	--
	Southbound	D	37.4	D	50.9	--	--
	Overall Mitigation – Remove split phasing. Change AM and PM signal timing and cycle length	**B**	**16.7**	**C**	**32.6**	--	--
	Eastbound	C	22.6	D	43.3	--	--
	Westbound	A	7.3	B	12.9	--	--
	Northbound	C	32.6	D	39.9	--	--
	Southbound	C	34.3	C	34.3	--	--
23	Church Road and Cascades Parkway						
	Overall (Signalized)	**B**	**19.1**	**D**	**42.3**	--	--
	Eastbound	B	16.6	D	38.2	--	--
	Westbound	B	17.4	D	51.1	--	--
	Southbound	C	24.2	D	39.1	--	--
24	Loudoun County Parkway and Russell Branch Parkway						
	Overall (Signalized)	**C**	**34.1**	**D**	**45.8**	--	--
	Eastbound	C	25.9	C	22.9	--	--
	Westbound	A	2.2	A	4.0	--	--
	Northbound	D	36.1	C	28.3	--	--
	Southbound	D	37.6	F	88.7	--	--
	Overall Mitigation – Change signal timing and cycle length	**C**	**32.9**	**C**	**30.2**	--	--
	Eastbound	C	29.9	C	29.4	--	--
	Westbound	A	2.2	A	4.6	--	--
	Northbound	D	38.7	D	41.4	--	--
	Southbound	C	32.3	C	31.5	--	--
25	Russel Branch Parkway/Pacific Boulevard and Richfield Way/George Washington Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	--	--
	Eastbound	A	0.0	A	0.0	--	--
	Westbound	A	0.0	A	0.0	--	--
	Northbound	C	18.6	C	17.8	--	--
	Southbound	A	0.0	A	0.0	--	--
26	Gloucester Parkway and Pacific Boulevard						
	Overall (Signalized)	**F**	**126.9**	**F**	**124.6**	**F**	**660.2**
	Westbound	F	302.6	E	66.1	F	315.1
	Northbound	C	31.3	D	43.4	D	37.7
	Southbound	C	28.3	F	182.2	F	1508.7
	Overall Mitigation	**C**	**27.7**	**C**	**24.5**	**C**	**23.9**
	Westbound	D	50.7	B	16.7	C	28.8
	Northbound – Add 2nd through lane and right turn lane	C	22.3	D	41.8	C	20.2
	Southbound – Add 2nd through lane	A	6.0	B	18.8	C	24.7

Int. No.	Intersection (Approach/Movement)	Future Conditions (2015) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
27	Site Driveway #9 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	22.6	D	34.9	E	35.1
	Overall Mitigation –Add 2nd Northbound and Southbound Through lanes.	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound.	B	13.1	B	14.5	B	13.0
28	Site Driveway #10 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	F	64.7	F	803.4	F	1031.6
	Northbound	A	0.0	A	0.0	A	0.0
	Southbound	A	1.3	A	4.1	A	4.9
	Overall Mitigation – Install signal	**A**	**3.7**	**A**	**7.1**	**A**	**6.5**
	Westbound.	C	32.1	C	22.9	C	20.9
	Northbound – Add 2nd through lane.	A	2.9	A	4.9	A	5.7
	Southbound – Add 2nd through lane.	A	2.3	A	7.2	A	5.1
29	Site Driveway #8 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	F	512.5	F	103.9	F	**
	Overall Mitigation –Add 2nd Northbound and Southbound Through lanes.	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound.	C	15.7	B	12.4	B	14.9
30	Site Driveway #7 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	E	43.2	D	25.6	E	44.6
	Overall Mitigation –Add 2nd Northbound and Southbound Through lanes.	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound.	C	18.1	B	14.5	C	18.5
31	Site Driveway #6 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	C	17.4	F	*	D	34.5
	Westbound	E	42.5	C	24.9	E	42.4
	Overall Mitigation –Add 2nd Northbound and Southbound Through lanes.	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	B	12.9	F	**	C	16.1
	Westbound	B	18.0	B	14.2	C	17.9
32	Site Driveway #5 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	F	68.1	F	*	F	575.1
	Overall Mitigation –Add 2nd Northbound and Southbound Through lanes.	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	B	11.1	C	24.5	B	13.0
33	Site Driveway #2 and Pacific Boulevard						
	Overall (Signalized)	**C**	**30.4**	**F**	**123.1**	**C**	**26.4**
	Eastbound	C	27.7	C	30.7	C	33.8
	Northbound	C	31.0	B	18.2	C	32.4
	Southbound	C	29.9	F	253.1	B	14.6
	Overall Mitigation	**A**	**9.0**	**B**	**19.6**	**A**	**8.2**
	Eastbound	B	15.3	C	30.6	B	16.2
	Northbound – Add 2nd through lane	A	5.0	B	11.6	A	4.1
	Southbound – Add 2nd through lane.	B	14.9	C	22.8	B	12.7

Int. No.	Intersection (Approach/Movement)	Future Conditions (2015) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
34	Site Driveway #1 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	F	**	F	**	F	**
	Northbound	C	19.5	C	18.2	F	57.9
	Southbound	A	0.0	A	0.0	A	0.0
	Overall Mitigation – Install signal	**B**	**13.3**	**D**	**45.5**	**D**	**36.1**
	Eastbound	C	20.5	D	41.6	D	35.4
	Northbound – Add 2nd through lane and a left turn lane	B	10.7	D	46.1	D	43.9
	Southbound – Add 2nd through lane.	B	15.6	D	46.9	C	24.1
35	Site Driveway #4 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	F	754.0	F	**	F	638.8
	Northbound	B	11.3	A	9.1	A	9.2
	Southbound	A	0.0	A	0.0	A	0.0
	Overall Mitigation – Install signal	**B**	**11.6**	**C**	**21.9**	**B**	**12.4**
	Eastbound	B	19.5	D	36.4	C	20.5
	Northbound – Add 2nd through lane and left turn lane.	A	6.8	B	11.9	A	5.8
	Southbound – Add 2nd through lane.	B	15.8	C	25.1	B	17.1
36	Gloucester Parkway and Route 28 SB Off-Ramp						
	Overall (Unsignalized)	**A**	**6.3**	**A**	**2.9**	**A**	**4.3**
	Eastbound	A	0.0	A	0.0	A	0.0
	Westbound	B	11.3	B	11.2	B	11.2
	Southbound	A	6.4	A	5.0	A	5.1
37	Site Driveway #3 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	F	255.4	F	687.6	E	36.9
	Northbound	B	11.1	A	6.0	A	5.9
	Southbound	A	0.0	A	0.0	A	0.0
	Overall Mitigation – Install signal	**B**	**12.3**	**B**	**17.0**	**A**	**9.6**
	Eastbound	B	19.3	C	26.2	B	17.9
	Northbound – Add 2nd through lane and left turn lane.	A	7.1	A	9.5	A	3.7
	Southbound – Add 2nd through lane.	B	14.7	C	20.9	B	11.5

Note: N/A means not applicable.

As mentioned before, it is desirable to achieve an overall and per approach LOS D or better at each intersection. Assuming that the mitigation measures recommended in the total future 2011 conditions) and future background 2015 conditions were in place, the results presented in **Table 9** show that some of the study intersections would operate at unacceptable levels of service under the full build-out year (2015) conditions with the proposed Kincora development. The following improvements would be required to meet the desired LOS criteria set forth by Loudoun County under this scenario:

- *Intersection of Farmwell Road with Ashburn Village Boulevard:*
  - Adjust signal timing and cycle length.
- *Intersection of Waxpool Road with Pacific Boulevard:*

- Add third eastbound left turn lane
- Convert eastbound right turn lane to free flow right
- Adjust signal timing and cycle length.

- *Intersection of Chruch Road wth Davis Drive and Ruritan Circle:*
  - Remove split phasing on northbound and southbound phases.
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Loudoun County Parkway with Russell Branch Parkway:*
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Gloucester Parkway with Pacific Boulevard:*
  - Add second northbound through lane
  - Add northbound right turn lane
  - Add second southbound through lane
- *Intersection of Pacific Boulevard with Site Drive #10;*
  - Install traffic signal
  - Add second northbound through lane
  - Add second southbound through lane.
- *Intersection of Pacific Boulevard with Site Drive #1; Intersection of Pacific Boulevard with Site Drive #4; Intersection of Pacific Boulevard with Site Drive #3;*
  - Install traffic signal
  - Add northbound left turn lane
  - Add second northbound through lane
  - Add second southbound through lane.
- *Intersection of Pacific Boulevard with Site Drive #9; Intersection of Pacific Boulevard with Site Drive #8; Intersection of Pacific Boulevard with Site Drive #7; Intersection of Pacific Boulevard with Site Drive #5; Intersection of Pacific Boulevard with Site Drive #6; Intersection of Pacific Boulevard with Site Drive #2;*
  - Add second northbound through lane
  - Add second southbound through lane.

As mentioned earlier in the report, no analyses were performed at the recommended interchanges. **Figures 24A and B** illustrate graphically the intersection capacity analysis results. **Figure 25** shows the recommended improvements under the full build-out year conditions with the proposed Kincora development.

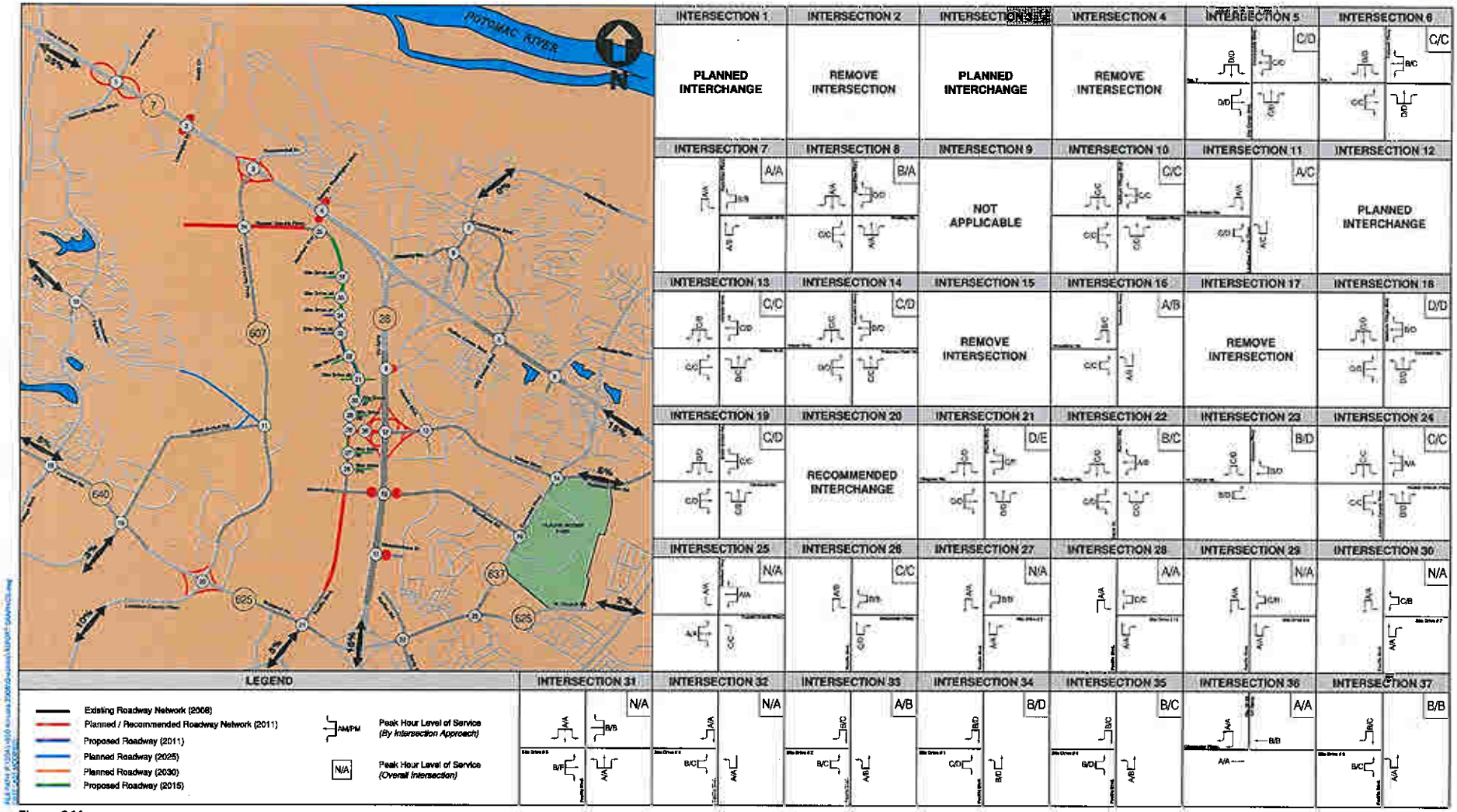

Figure 24A
Future Conditions with Development (Phase II - 2015) Peak Hour Levels of Service - Weekday

Table 14: Total Future (2025) Intersection Capacity Analysis

Int. No.	Intersection (Approach/Movement)	Future Conditions (2025) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
1	Route 7 and Ashburn Village Blvd./Janelia Farm Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
2	Route 7 and Lexington Drive/Smith Circle						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
3	Route 7 and Loudoun County Parkway/Presidential Dr.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
4	Route 7 and Richfield Way/George Washington Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
5	Route 7 and City Center Blvd./Countryside Blvd.						
	Overall (Signalized)	**D**	**36.4**	**E**	**69.7**	--	--
	Eastbound	D	37.4	F	96.5	--	--
	Westbound	C	32.9	D	50.8	--	--
	Northbound	C	31.1	D	47.0	--	--
	Southbound	D	48.5	D	48.4	--	--
	Overall Mitigation –Change PM signal timing and cycle length	**D**	**36.4**	**D**	**39.7**	--	--
	Eastbound	D	37.4	D	40.5	--	--
	Westbound	C	32.9	C	34.6	--	--
	Northbound	C	31.1	D	47.7	--	--
	Southbound	D	48.5	D	53.6	--	--
6	Route 7 and Loudoun Tech Drive/Palisade Parkway						
	Overall (Signalized)	**C**	**21.7**	**D**	**35.4**	--	--
	Eastbound	C	20.4	D	35.7	--	--
	Westbound	B	18.6	C	30.5	--	--
	Northbound	D	48.4	D	45.1	--	--
	Southbound	D	44.7	D	50.6	--	--
7	Algonkian Parkway and Countryside Boulevard						
	Overall (Signalized)	**A**	**6.3**	**A**	**9.0**	--	--
	Westbound	B	13.1	B	13.4	--	--
	Northbound	A	9.2	B	12.5	--	--
	Southbound	A	2.6	A	3.6	--	--
8	Algonkian Parkway and Winding Road/Sutherlin Lane						
	Overall (Signalized)	**B**	**12.1**	**A**	**7.3**	--	--
	Eastbound	C	34.4	C	33.8	--	--
	Westbound	D	35.6	D	37.4	--	--
	Northbound	A	4.7	A	4.3	--	--
	Southbound	A	6.8	A	5.0	--	--
9	Route 28 and Dulles Center Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
10	Ashburn Village Boulevard and Gloucester Parkway						
	Overall (Signalized)	**C**	**33.3**	**D**	**41.6**	--	--
	Eastbound	D	42.2	D	54.2	--	--
	Westbound	C	26.4	D	52.3	--	--
	Northbound	C	29.4	D	36.8	--	--
	Southbound	C	31.1	C	30.7	--	--

ATTACHMENT 13

Int. No.	Intersection (Approach/Movement)	Future Conditions (2025) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
	Overall Mitigation –Change AM signal timing	**C**	**32.3**	**D**	**38.8**	--	--
	Eastbound	C	34.2	D	44.8	--	--
	Westbound	C	29.0	D	42.8	--	--
	Northbound	C	31.4	D	40.0	--	--
	Southbound	C	33.5	C	31.5	--	--
11	Loudoun County Parkway and Smith Switch Road						
	Overall (Signalized)	**F**	**206.7**	**F**	**770.0**	**F**	**83.9**
	Eastbound	F	82.8	F	122.5	E	60.2
	Westbound	F	576.4	D	52.6	F	133.6
	Northbound	B	13.3	B	17.3	B	11.2
	Southbound	F	151.8	F	1553.5	F	110.5
	Overall Mitigation – Change signal timing and cycle length	**D**	**36.9**	**D**	**48.2**	**C**	**30.0**
	Eastbound –Add 2nd left turn lane and right turn bay	D	50.9	D	54.5	C	34.5
	Westbound –Add 2 left turn lanes, 2 through lanes and right turn bay	D	47.2	D	50.7	D	52.2
	Northbound –Add 3rd through lane and right turn bay	D	41.6	D	52.6	B	11.1
	Southbound –Add 2 left turn lanes, 3rd through lane and right turn bay	B	18.4	D	42.5	C	26.0
12	Route 28 and Nokes Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
13	Nokes Boulevard and Atlantic Boulevard						
	Overall (Signalized)	**C**	**34.3**	**C**	**32.9**	--	--
	Eastbound	C	29.0	D	39.3	--	--
	Northbound	D	51.9	C	27.8	--	--
	Southbound	C	33.4	B	14.4	--	--
14	Nokes Boulevard and Cascade Pkwy./Potomac View Rd.						
	Overall (Signalized)	**C**	**30.2**	**D**	**44.4**	--	--
	Eastbound	D	39.9	D	48.4	--	--
	Westbound	D	40.3	D	49.8	--	--
	Northbound	C	23.0	D	43.3	--	--
	Southbound	C	27.0	D	40.0	--	--
15	Route 28 and Severn Way						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
16	Potomac View Road and Woodland Road						
	Overall (Signalized)	**A**	**7.4**	**B**	**16.4**	--	--
	Eastbound	C	23.4	C	32.3	--	--
	Northbound	A	3.8	B	10.2	--	--
	Southbound	A	9.7	C	20.6	--	--
17	Route 28 and Steeplechase Drive						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
18	Farmwell Road and Ashburn Village Boulevard						
	Overall (Signalized)	**C**	**33.6**	**E**	**77.5**	--	--
	Eastbound	C	34.7	D	40.0	--	--
	Westbound	B	19.3	F	110.0	--	--
	Northbound	D	50.2	D	53.4	--	--
	Southbound	D	37.2	D	39.3	--	--

Int. No.	Intersection (Approach/Movement)	Future Conditions (2025) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Overall Mitigation – Change PM signal timing and cycle length	**C**	**33.6**	**D**	**43.8**	--	--
	Eastbound	C	34.7	D	35.4	--	--
	Westbound	B	19.3	D	46.0	--	--
	Northbound	D	50.2	D	53.7	--	--
	Southbound	D	37.2	D	41.4	--	--
19	Farmwell Road and Waxpool Road/Smith Switch Road						
	Overall (Signalized)	**B**	**20.0**	**D**	**41.7**	--	--
	Eastbound	B	18.9	C	22.5	--	--
	Westbound	B	19.5	D	52.5	--	--
	Northbound	C	20.1	C	29.8	--	--
	Southbound	D	47.5	D	46.2	--	--
20	Waxpool Road and Loudoun County Parkway						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
21	Waxpool Road and Pacific Boulevard						
	Overall (Signalized)	**F**	**206.3**	**F**	**88.7**	**D**	**35.9**
	Eastbound	F	330.5	D	48.3	C	31.4
	Westbound	D	44.7	F	99.8	C	28.0
	Northbound	F	252.3	E	76.5	E	55.8
	Southbound	C	29.9	F	132.2	D	46.9
	Overall Mitigation – Change signal timing and cycle length	**D**	**50.4**	**F**	**94.4**	**D**	**37.8**
	Eastbound	D	46.4	D	49.0	C	31.5
	Westbound	D	54.3	F	99.8	C	28.1
	Northbound	F	81.4	D	54.4	D	54.5
	Southbound	D	52.6	F	181.5	D	53.8
22	Church Road and Davis Drive/Ruritan Circle						
	Overall (Signalized)	**B**	**18.9**	**C**	**31.4**	--	--
	Eastbound	C	27.4	D	42.8	--	--
	Westbound	A	8.0	B	11.1	--	--
	Northbound	C	31.7	D	39.0	--	--
	Southbound	C	34.6	C	34.4	--	--
23	Church Road and Cascades Parkway						
	Overall (Signalized)	**C**	**20.6**	**D**	**49.3**	--	--
	Eastbound	B	17.7	D	52.9	--	--
	Westbound	B	19.4	D	49.2	--	--
	Southbound	C	25.8	D	44.8	--	--
24	Loudoun County Parkway and Russell Branch Parkway						
	Overall (Signalized)	**E**	**68.5**	**E**	**75.8**	--	--
	Eastbound	C	20.4	B	17.0	--	--
	Westbound	A	6.3	F	139.7	--	--
	Northbound	D	42.8	E	60.2	--	--
	Southbound	F	103.4	E	62.1	--	--
	Overall Mitigation – Change signal timing and cycle length	**D**	**46.7**	**D**	**35.3**	--	--
	Eastbound	C	30.6	B	19.9	--	--
	Westbound	A	6.6	A	9.0	--	--
	Northbound	D	52.5	D	53.6	--	--
	Southbound	D	50.1	D	48.7	--	--

Int. No.	Intersection (Approach/Movement)	Future Conditions (2025) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
25	Russel Branch Parkway/Pacific Boulevard and Richfield Way/George Washington Boulevard						
	Overall (Signalized)	**A**	**0.0**	**A**	**0.0**	--	--
	Eastbound	A	0.0	A	0.0	--	--
	Westbound	A	0.0	A	0.0	--	--
	Northbound	A	0.0	D	29.3	--	--
	Southbound	A	0.0	A	0.0	--	--
26	Gloucester Parkway and Pacific Boulevard						
	Overall (Signalized)	F	290.6	F	473.6	F	189.2
	Eastbound	F	143.8	F	95.0	F	312.5
	Westbound	F	386.0	E	67.1	E	73.0
	Northbound	F	277.2	D	52.0	F	87.6
	Southbound	F	166.1	F	901.8	F	256.0
	Overall Mitigation – Change signal timing and cycle length	**D**	**42.9**	**D**	**53.3**	**C**	**30.0**
	Eastbound – Add 2 left turn lanes, 3 through lanes and a right turn lane	D	49.1	D	53.6	D	45.5
	Westbound* - Allow free flow right turn lane	D	40.2	D	48.0	B	14.7
	Northbound – Add left turn bay	D	44.9	D	54.7	C	32.1
	Southbound – Add 2nd left turn lane and right turn bay	D	42.6	D	54.8	C	29.1
27	Site Driveway #9 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	17.0	D	28.8	B	13.1
28	Site Driveway #10 and Pacific Boulevard						
	Overall (Signalized)	**A**	**4.9**	**B**	**10.3**	**A**	**6.4**
	Westbound	D	37.4	C	32.8	B	16.5
	Northbound	A	4.5	A	4.0	A	5.2
	Southbound	A	2.6	B	11.0	A	5.4
29	Site Driveway #8 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	23.4	B	12.9	C	20.1
30	Site Driveway #7 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	21.5	B	13.1	C	21.7
31	Site Driveway #6 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	C	16.1	F	**	C	20.5
	Westbound	C	21.3	B	12.9	C	20.8
32	Site Driveway #5 and Pacific Boulevard						
	Overall (Unsignalized) (Add southbound right turn bay)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	B	11.0	F	**	B	13.7
33	Site Driveway #2 and Pacific Boulevard						
	Overall (Signalized)	**D**	**50.6**	**F**	**88.4**	**B**	**10.7**
	Eastbound	C	22.5	F	84.7	B	18.3
	Northbound	E	68.7	C	22.7	A	6.1
	Southbound	B	17.5	F	136.9	B	16.0
	Overall Mitigation –Change signal timing and cycle length	**C**	**30.5**	**C**	**34.0**	**B**	**11.9**
	Eastbound – Add right turn lane	B	18.2	D	44.5	B	12.2

Int. No.	Intersection (Approach/Movement)	Future Conditions (2025) with Development					
		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
	Northbound – And left turn lane	D	35.1	C	22.5	A	8.8
	Southbound – Add 3rd through lane	C	22.8	D	37.9	B	16.7
34	Site Driveway #1 and Pacific Boulevard						
	Overall (Signalized)	**F**	**99.3**	**F**	**162.4**	**D**	**54.7**
	Eastbound	C	28.0	F	238.5	D	53.3
	Northbound	F	152.8	E	78.7	E	74.3
	Southbound	B	18.7	F	195.7	C	26.3
	Overall Mitigation –Change signal timing and cycle length	**D**	**38.3**	**C**	**28.9**	**D**	**40.2**
	Eastbound – Add free flow right turn lane	A	9.0	C	24.4	D	40.6
	Northbound	D	50.0	C	22.6	D	52.5
	Southbound – Add right turn lane	C	23.5	D	37.5	C	21.9
35	Site Driveway #4 and Pacific Boulevard						
	Overall (Signalized)	**F**	**88.8**	**F**	**131.0**	**B**	**18.5**
	Eastbound	C	25.3	F	411.2	C	24.4
	Northbound	F	145.4	C	28.4	B	14.6
	Southbound	B	19.3	C	26.5	C	20.8
	Overall Mitigation –Change signal timing and cycle length	**C**	**26.2**	**C**	**21.8**	**B**	**11.2**
	Eastbound – Add right turn lane	C	20.2	C	27.6	B	14.0
	Northbound – And left turn lane	C	21.5	B	17.3	A	6.2
	Southbound	C	34.6	C	22.9	B	16.0
36	Gloucester Parkway and Route 28 SB Off-Ramp						
	Overall (Signalized)	**C**	**27.0**	**A**	**6.5**	**A**	**5.2**
	Eastbound	A	0.0	A	1.9	A	0.0
	Westbound	B	13.3	A	6.6	B	11.5
	Southbound	F	86.2	C	26.3	A	8.9
	Overall Mitigation –Change AM signal timing	**C**	**21.0**	**A**	**6.5**	**A**	**5.2**
	Eastbound	A	0.0	A	1.9	A	0.0
	Westbound	C	20.7	A	6.6	B	11.5
	Southbound	D	44.8	C	26.3	A	8.9
37	Site Driveway #3 and Pacific Boulevard						
	Overall (Unsignalized)	**F**	**118.1**	**F**	**96.1**	**B**	**13.3**
	Eastbound	C	26.2	F	261.8	C	20.0
	Northbound	F	256.4	B	10.8	A	6.4
	Southbound	B	18.4	C	20.8	B	17.2
	Overall Mitigation – Install signal	**D**	**35.9**	**B**	**10.8**	**A**	**8.5**
	Eastbound – Add right turn lane	C	20.2	B	11.8	B	11.7
	Northbound – Add left turn lane	C	33.4	A	7.7	A	3.2
	Southbound	D	41.8	B	17.3	B	12.4

Note: N/A means not applicable.

- *Intersection of Route 7 with City Center Boulevard and Countryside Boulevard:*
  - Adjust PM signal timings and cycle lengths.
- *Intersection of Ashburn Village Boulevard with Gloucester Parkway:*
  - Adjust AM and PM signal timings.

- *Intersection of Loudoun County Parkway with Smith Switch Road:*
  - Add second eastbound left turn bay
  - Add eastbound right turn bay
  - Add 2 westbound left turn lanes, 2 through lanes and a right turn lane
  - Add third northbound through lane
  - Add northbound right turn lane
  - Add third southbound through lane
  - Add southbound right turn lane
  - Add 2 southbound left turn lanes
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Farmwell Road with Ashburn Village Boulevard:*
  - Adjust PM signal timings and cycle lengths.
- *Intersection of Waxpool Road with Pacific Boulevard:*
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Loudoun County Parkway with Russell Branch Parkway:*
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Pacific Boulevard with Gloucester Parkway:*
  - Adjust AM and PM signal timings and cycle lengths
  - Add 2 eastbound left turn lanes, 3 through lanes and a right turn lane
  - Convert westbound right turn lane to a free flow right
  - Add northbound left turn lane
  - Add second southbound left turn lane and a right turn bay.
- *Intersection of Route 28 Westbound Off-Ramp with Gloucester Parkway:*
  - Adjust AM signal timings.
- *Intersection of Pacific Boulevard with Site Driveway #5:*
  - Add southbound right turn lane
- *Intersection of Pacific Boulevard with Site Driveway #2:*
  - Add third southbound through lane.
  - Adjust AM and PM signal timings and cycle lengths.

- *Intersection of Pacific Boulevard with Site Driveway #1:*
  - Add eastbound free flow right turn lane
  - Add southbound right turn lane
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Pacific Boulevard with Site Driveway #4:*
  - Add eastbound right turn lane
  - Adjust AM and PM signal timings and cycle lengths.
- *Intersection of Pacific Boulevard with Site Driveway #3:*
  - Add eastbound right turn lane

As mentioned earlier in the report, no analyses were performed at the recommended interchanges. No improvements were recommended at the intersection of Russell Branch Parkway with Richfield Way since adequate gaps would be created by adjacent signalized intersection to allow acceptable traffic operations at the conflicting movements of the unsignalized intersection. **Figures 38A and B** illustrate graphically the intersection capacity analysis results. **Figure 39** shows the recommended improvements under the full build-out year conditions with the proposed Kincora development.

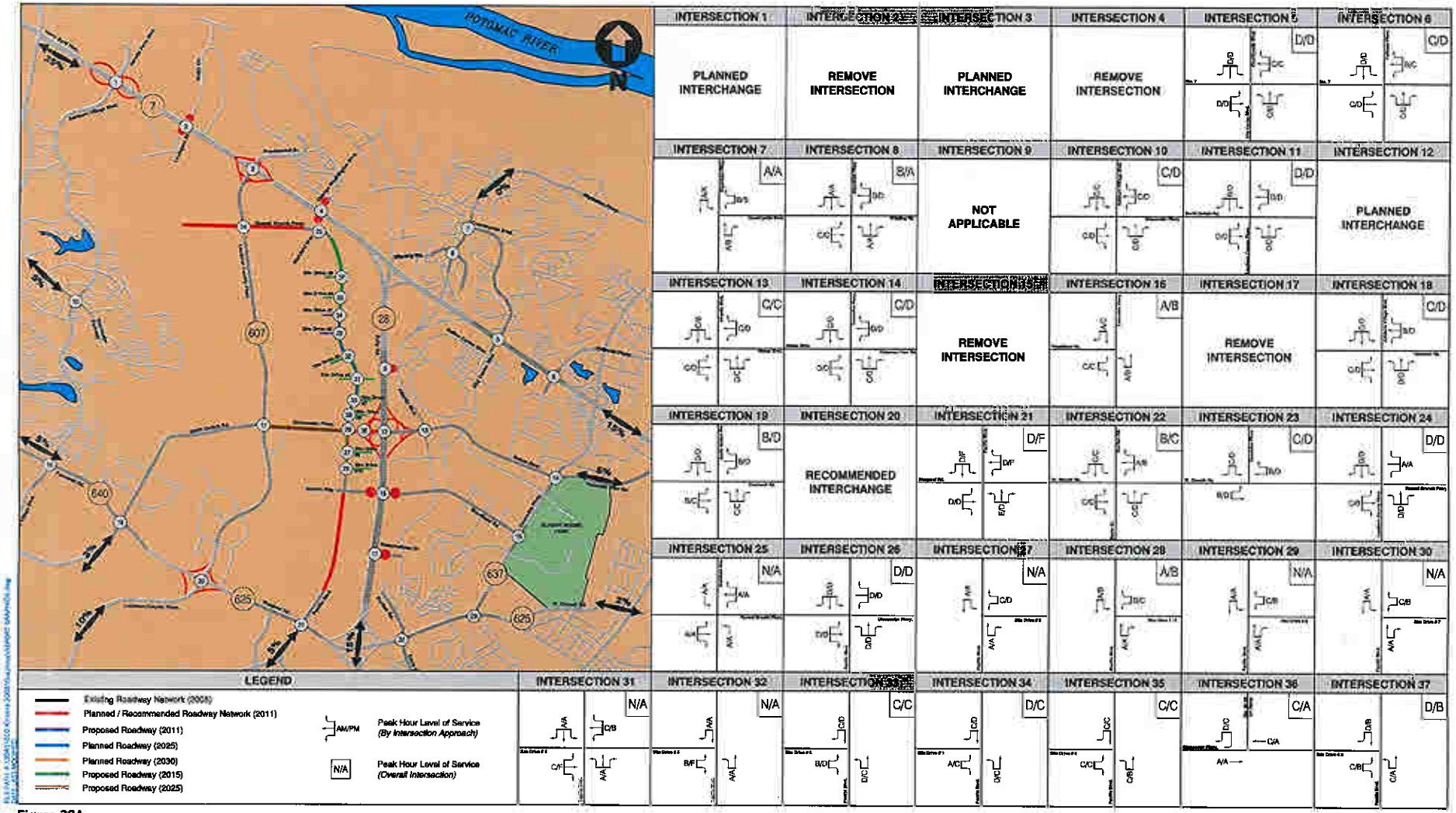

Figure 38A
Future Conditions with Development (2025) Peak Hour Levels of Service - Weekday

Table 15: Total Future (2030) Intersection Capacity Analysis

Int. No.	Intersection (Approach/Movement)	Future Conditions (2030) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
1	Route 7 and Ashburn Village Blvd./Janelia Farm Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
2	Route 7 and Lexington Drive/Smith Circle						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
3	Route 7 and Loudoun County Parkway/Presidential Dr.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
4	Route 7 and Richfield Way/George Washington Blvd.						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
5	Route 7 and City Center Blvd./Countryside Blvd.						
	Overall (Signalized)	**D**	**36.4**	**D**	**39.7**	--	--
	Eastbound	D	37.4	D	40.5	--	--
	Westbound	C	32.9	C	34.6	--	--
	Northbound	C	31.1	D	47.7	--	--
	Southbound	D	48.5	D	53.6	--	--
6	Route 7 and Loudoun Tech Drive/Palisade Parkway						
	Overall (Signalized)	**C**	**21.7**	**D**	**35.4**	--	--
	Eastbound	C	20.4	D	35.7	--	--
	Westbound	B	18.6	C	30.5	--	--
	Northbound	D	48.4	D	45.1	--	--
	Southbound	D	44.7	D	50.6	--	--
7	Algonkian Parkway and Countryside Boulevard						
	Overall (Signalized)	**A**	**6.3**	**A**	**9.0**	--	--
	Westbound	B	13.1	B	13.4	--	--
	Northbound	A	9.2	B	12.5	--	--
	Southbound	A	2.6	A	3.6	--	--
8	Algonkian Parkway and Winding Road/Sutherlin Lane						
	Overall (Signalized)	**B**	**12.1**	**A**	**7.3**	--	--
	Eastbound	C	34.4	C	33.8	--	--
	Westbound	D	35.6	D	37.4	--	--
	Northbound	A	4.7	A	4.3	--	--
	Southbound	A	6.8	A	5.0	--	--
9	Route 28 and Dulles Center Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
10	Ashburn Village Boulevard and Gloucester Parkway						
	Overall (Signalized)	**C**	**32.3**	**D**	**38.8**	--	--
	Eastbound	C	34.2	D	44.8	--	--
	Westbound	C	29.0	D	42.8	--	--
	Northbound	C	31.4	D	40.0	--	--
	Southbound	C	33.5	C	31.5	--	--
11	Loudoun County Parkway and Smith Switch Road						
	Overall (Signalized)	**D**	**36.9**	**D**	**48.2**	**C**	**30.0**
	Eastbound	D	50.9	D	54.4	C	34.5
	Westbound	D	47.2	D	50.7	D	52.2
	Northbound	D	41.6	D	52.6	B	11.1
	Southbound	B	18.4	D	42.5	C	26.0
12	Route 28 and Nokes Boulevard						
	Overall (All Free-Flow Movements)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

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Int. No.	Intersection (Approach/Movement)	Future Conditions (2030) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
13	Nokes Boulevard and Atlantic Boulevard						
	Overall (Signalized)	**C**	**34.3**	**C**	**32.3**	**--**	**--**
	Eastbound	C	29.0	D	41.6	--	--
	Westbound	C	30.9	D	44.7	--	--
	Northbound	D	51.9	C	26.4	--	--
	Southbound	C	33.4	B	14.1	--	--
14	Nokes Boulevard and Cascade Pkwy./Potomac View Rd.						
	Overall (Signalized)	**C**	**30.5**	**D**	**46.7**	**--**	**--**
	Eastbound	D	40.3	D	49.0	--	--
	Westbound	D	40.8	D	50.3	--	--
	Northbound	C	23.1	D	47.8	--	--
	Southbound	C	27.4	D	41.5	--	--
15	Route 28 and Severn Way						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
16	Potomac View Road and Woodland Road						
	Overall (Signalized)	**A**	**8.0**	**B**	**17.1**	**--**	**--**
	Eastbound	C	23.2	C	34.7	--	--
	Northbound	A	3.9	B	10.8	--	--
	Southbound	B	11.0	C	21.2	--	--
17	Route 28 and Steeplechase Drive						
	Overall (Intersection Removed)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
18	Farmwell Road and Ashburn Village Boulevard						
	Overall (Signalized)	**C**	**34.0**	**D**	**48.8**	**--**	**--**
	Eastbound	D	35.6	D	35.5	--	--
	Westbound	B	19.5	E	55.3	--	--
	Northbound	D	50.2	D	53.7	--	--
	Southbound	D	37.2	D	41.4	--	--
19	Farmwell Road and Waxpool Road/Smith Switch Road						
	Overall (Signalized)	**B**	**19.1**	**D**	**40.7**	**--**	**--**
	Eastbound	B	17.6	B	18.4	--	--
	Westbound	B	18.8	D	52.0	--	--
	Northbound	C	20.3	C	30.3	--	--
	Southbound	D	48.9	D	46.2	--	--
20	Waxpool Road and Loudoun County Parkway						
	Intersection converted into a grade-separated interchange in the Future Background (2011) Conditions						
21	Waxpool Road and Pacific Boulevard						
	Overall (Signalized)	**E**	**58.7**	**F**	**103.4**	**D**	**27.9**
	Eastbound	E	55.7	D	48.2	C	31.4
	Westbound	E	64.0	F	122.7	C	29.2
	Northbound	E	61.4	D	54.4	D	54.5
	Southbound	D	52.6	F	161.5	D	53.8
22	Church Road and Davis Drive/Ruritan Circle						
	Overall (Signalized)	**C**	**21.8**	**D**	**46.3**	**--**	**--**
	Eastbound	C	33.4	E	66.9	--	--
	Westbound	A	8.1	B	12.9	--	--
	Northbound	C	31.7	D	44.2	--	--
	Southbound	C	34.6	D	36.8	--	--

Int. No.	Intersection (Approach/Movement)	Future Conditions (2030) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
23	Church Road and Potomac View Road						
	Overall (Signalized)	**C**	**21.8**	**E**	**58.5**	**--**	**--**
	Eastbound	B	18.7	E	70.2	--	--
	Westbound	C	20.8	D	54.4	--	--
	Southbound	C	27.2	D	47.3	--	--
24	Loudoun County Parkway and Russell Branch Parkway						
	Overall (Signalized)	**D**	**48.6**	**D**	**35.3**	**--**	**--**
	Eastbound	C	30.6	B	19.9	--	--
	Westbound	A	6.6	A	9.9	--	--
	Northbound	D	53.8	D	53.6	--	--
	Southbound	D	52.5	D	48.7	--	--
25	Russel Branch Parkway/Pacific Boulevard and Richfield Way/George Washington Boulevard						
	Overall (Signalized)	**A**	**0.0**	**A**	**0.0**	**--**	**--**
	Eastbound	A	0.0	A	0.0	--	--
	Westbound	A	0.0	A	0.0	--	--
	Northbound	A	0.0	D	34.1	--	--
	Southbound	A	0.0	A	0.0	--	--
26	Gloucester Parkway and Pacific Boulevard						
	Overall (Signalized)	**D**	**42.9**	**D**	**53.3**	**C**	**30.0**
	Eastbound	D	49.1	D	53.6	D	45.5
	Westbound	D	40.2	D	48.0	B	14.7
	Northbound	D	44.9	D	54.7	C	32.1
	Southbound	D	42.6	D	54.8	C	29.1
27	Site Driveway #9 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	17.0	D	31.1	B	13.1
28	Site Driveway #10 and Pacific Boulevard						
	Overall (Signalized)	**A**	**4.9**	**A**	**9.7**	**A**	**6.4**
	Westbound	D	37.4	C	31.0	B	16.5
	Northbound	A	4.5	A	4.0	A	5.2
	Southbound	A	2.6	B	10.2	A	5.4
29	Site Driveway #8 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	24.4	B	12.9	C	20.1
30	Site Driveway #7 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Westbound	C	21.5	B	13.1	C	21.7
31	Site Driveway #6 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	C	16.1	F	**	C	20.5
	Westbound	C	21.3	B	12.9	C	20.8
32	Site Driveway #5 and Pacific Boulevard						
	Overall (Unsignalized)	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
	Eastbound	B	12.7	F	**	B	13.1
33	Site Driveway #2 and Pacific Boulevard						
	Overall (Signalized)	**C**	**30.5**	**C**	**34.0**	**B**	**11.9**
	Eastbound	B	18.2	D	44.5	B	12.2
	Northbound	D	35.1	C	22.5	A	8.8
	Southbound	C	32.8	D	37.9	B	16.7

Int. No.	Intersection (Approach/Movement)	Future Conditions (2030) with Development					
		AM Peak Hour		*PM Peak Hour*		*Saturday Peak Hour*	
		LOS	Delay	LOS	Delay	LOS	Delay
34	Site Driveway #1 and Pacific Boulevard						
	Overall (Signalized)	**D**	**38.3**	**C**	**28.9**	**D**	**40.2**
	Eastbound	A	9.0	C	24.4	D	40.6
	Northbound	D	50.0	C	22.6	D	52.5
	Southbound	C	23.5	D	37.5	C	21.9
35	Site Driveway #4 and Pacific Boulevard						
	Overall (Signalized)	**C**	**26.2**	**C**	**21.8**	**B**	**11.2**
	Eastbound	C	20.2	C	27.6	B	14.0
	Northbound	C	21.5	B	17.3	A	6.2
	Southbound	C	34.6	C	22.9	B	16.0
36	Gloucester Parkway and Route 28 SB Off-Ramp						
	Overall (Unsignalized)	**C**	**21.0**	**A**	**6.9**	**A**	**5.2**
	Eastbound	A	0.0	A	3.2	A	0.0
	Westbound	C	20.7	A	6.4	B	11.5
	Southbound	D	44.8	C	30.8	A	8.9
37	Site Driveway #3 and Pacific Boulevard						
	Overall (Unsignalized)	**D**	**35.9**	**B**	**10.8**	**A**	**8.5**
	Eastbound	C	20.2	B	11.8	B	11.7
	Northbound	C	33.4	A	7.7	A	3.2
	Southbound	D	41.8	B	17.3	B	12.4

Note: N/A means not applicable.

As mentioned in previous sections of this report, it is desirable to achieve an overall and per approach LOS D or better at each intersection. Assuming that the mitigation measures recommended in the total future 2025 conditions were in place, the results presented in **Table 15** show that most of the study intersections would operate at acceptable levels of service under the total future 2030 conditions.

Figures 41A and B illustrate graphically the intersection capacity analysis results.

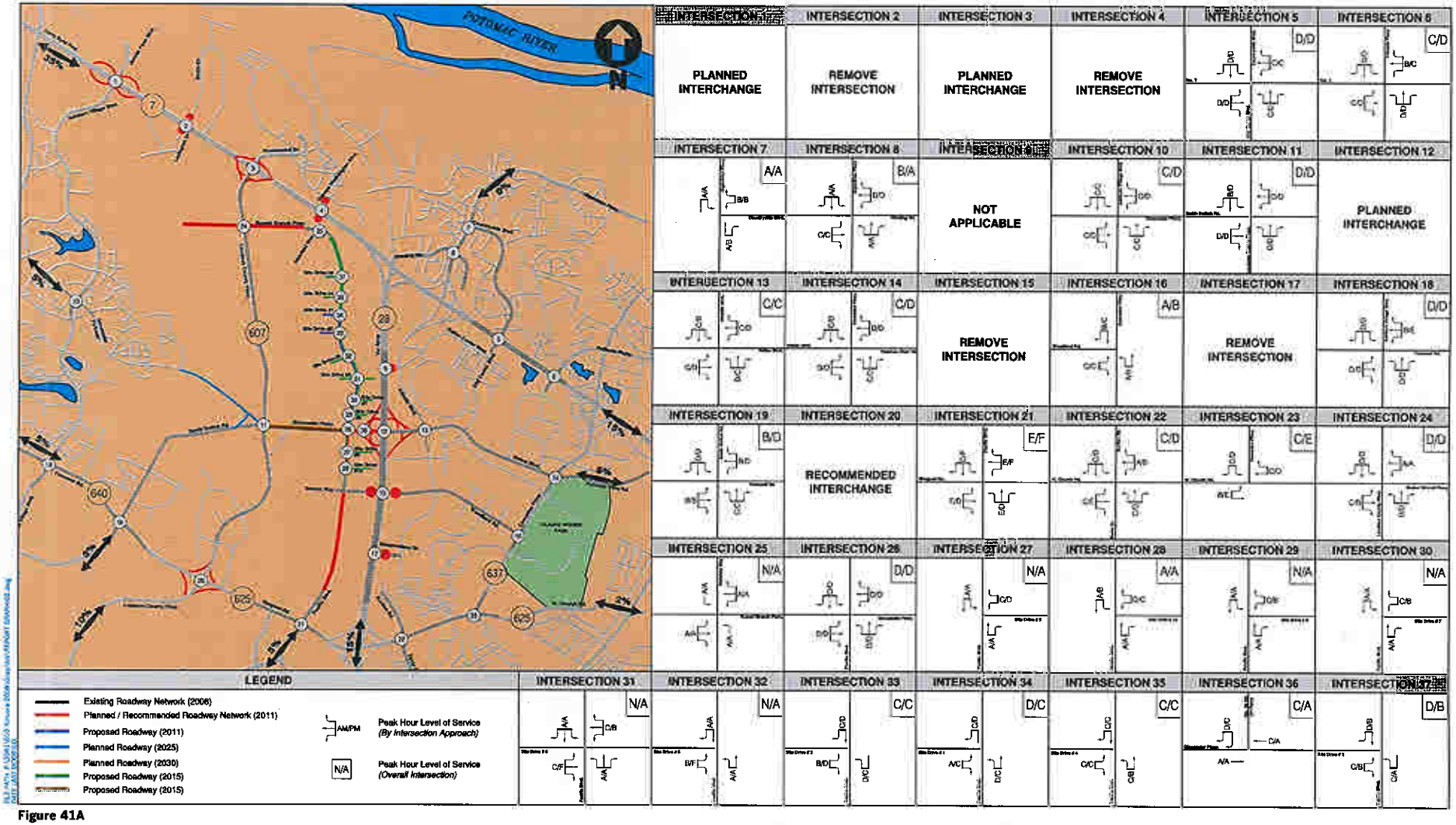

Figure 41A
Future Conditions with Development (2030) Peak Hour Levels of Service - Weekday

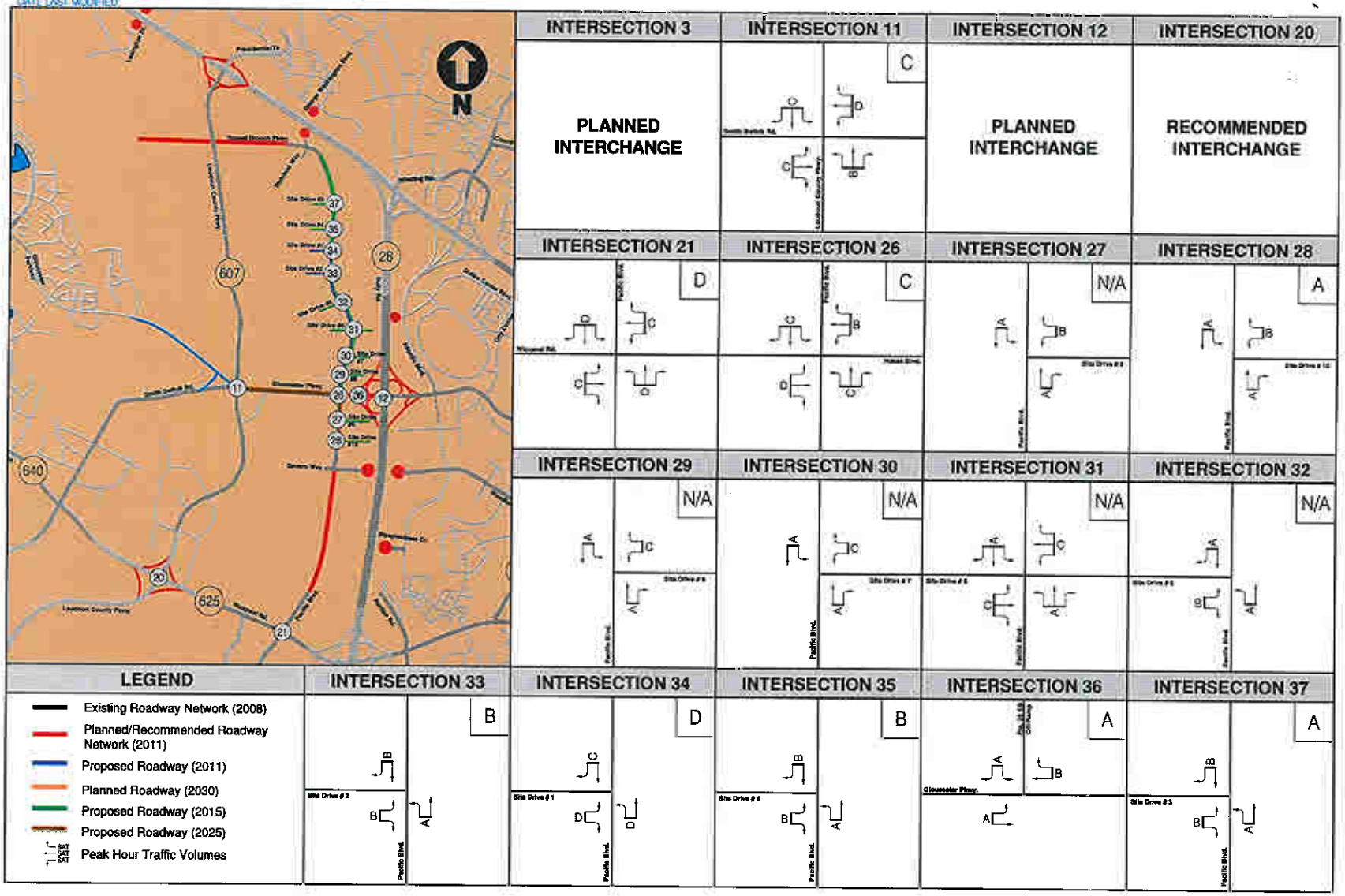

Figure 41B
Future Conditions with Development (2030) Peak Hour Levels of Service - Saturday

CONCLUSIONS

Site Location and Study Area

The site is located north of Route 847 (Severn Way), south of Route 7 (Harry Byrd Highway), east of Route 607 (Loudoun County Parkway), and west of Route 28 (Sully Road). The study area for the traffic study supporting the rezoning encompasses a number of intersections throughout the eastern portions of Loudoun County.

Description of Proposed Development

The proposed development is uniquely located in the epicenter of educational institutions and commercial developments in Loudoun County. The unique location coupled with the vibrant mixed use concept has resulted in an overall development mix, which will include commercial office, retail uses, hotels, recreational facilities, residential units, structured garage, street and surface parking, a baseball stadium, along with pedestrian walkways, sidewalks and alleyways, incorporating streetscape enhancements, including bicycle amenities. By providing corresponding uses on the same site, the proposed development will encourage self-contained pedestrian trips. The project will be completed in three phases with phase I in 2011, phase II in 2015 and full build-out (Phase III) of the development expected in 2025.

The project site consists of approximately 9.1 million square feet of developable land designated as keynote employment under the Loudoun County's Revised General Plan and currently zoned for "flex" industrial use (PD-IP). Consistent with the Revised General Plan, the proposed development program calls for a rezoning of the property to PD-MUB (Planned Development- Mixed Use Business District) to allow for a maximum of approximately 7.4 million square feet of mixed-use development consisting of approximately 4.7 million square feet of office use, approximately 500,000 square feet of retail development, approximately 1.8 million square feet of residential use, and a baseball stadium (5,500 seating capacity).

Principal Findings, Conclusions and Recommendations

The proposed development plan for the proposed Kincora project calls for a Special Exception to allow for a baseball stadium, and office with some supporting auxiliary development on the site. A rezoning of the property is also proposed to PD-MUB to allow for the proposed mixed-use development with the baseball stadium. ***Although, the proposed Rezoning application incorporates the Special Exception uses, in order to differentiate between the two applications, the conclusions and recommendations are listed separately***:

Stadium Special Exception

1. The proposed baseball stadium will be constructed in the initial phase of the proposed

development. The construction of the proposed stadium is scheduled to be complete by 2011

2. The proposed facility will compliment the current community, commercial, corporate, and residential benefits available to residents of both the county and neighboring counties, and serve as a significant economic stimulus and destination to the overall Loudoun County economy.
3. The proposed baseball stadium will have a seating capacity of approximately 5, 500 and is planned to host minor league baseball games.
4. The traffic generated by the proposed stadium will be in the off peak hours and will not interfere with the peak commute time period. Majority of the games will be held over the weekend. Per VDOT and County staff's request, a Saturday scenario was analyzed for the traffic generated by the baseball stadium.
5. A half-section of Pacific Boulevard (two-lane) from Gloucester Parkway to the stadium entrance will be constructed to serve the stadium patrons.
6. Of note, the existing and regional traffic on the roadway network in the vicinity of the proposed development is lower during the weekends. In addition, the trips generated by the office, retail and residential components of the proposed mixed-use development on a typical weekday are higher than the trips generated by the mixed-use development and the baseball stadium over the weekend.
7. Hence, the analysis reveals that the proposed roadway network combined with the roadway elements recommended by other private developers and public agencies will result in a roadway network that can accommodate the traffic generated by the special exception use (baseball stadium).

Rezoning Application

According to Loudoun County, it is desirable to achieve an overall and per approach level of service (LOS) D or better. Based on these guidelines, the analysis presented in this report supports the following major conclusions:

1. The Kincora site is planned as a mixed-use community with a live work environment that provides a full range of land uses including office, retail, and residential developments.
2. The site is uniquely located adjacent to two planned limited access highways (i.e. Route 7 and Route 28), and will be served by a future grade-separated interchange at the Route 28 and Nokes Boulevard intersection.
3. Full build-out site traffic can be accommodated by the existing, planned, and proposed roadway networks with local connections of Gloucester Parkway to Route 28, Pacific Boulevard to Russell Branch Parkway, and a grade-separated interchange at the existing Route 28 and Nokes Boulevard intersection.

4. The following is a summary of the roadway elements required to accommodate existing and future regional, local, and site traffic:

    a. The Route 7 and Route 28 corridors will be required to be widened to eight lanes and have grade-separated interchanges within the vicinity of the proposed development in order to handle the commuting traffic traveling to and from eastern Loudoun County, points west, Fairfax County, and Washington, D.C.

    b. Regional roadways like Waxpool Road and Loudoun County Parkway will require major lane improvements to accommodate commuter and local traffic.

    c. Roadway and signal improvements will be required at major intersections to accommodate regional, local, and site traffic.

    d. The following mitigation measures will be required under the Phase I (2011) conditions with the proposed Kincora development considering the Route 28 and Nokes Boulevard Interchange:

        - *Roadway and Signal Improvements:*
            - Gloucester Parkway and Pacific Boulevard
            - Pacific Boulevard and Future Site Drive #2

    e. The following mitigation measures will be required under the Phase II (2015) conditions with the proposed Kincora development:

        - *Roadway and Signal Improvements:*
            - Farmwell Road and Ashburn Village Boulevard
            - Waxpool Road and Pacific Boulevard
            - Gloucester Parkway and Pacific Boulevard
            - Pacific Boulevard and all proposed site driveways
        - *Signal Improvements:*
            - Route 7 with Loudoun Tech Drive/Palisade Parkway
            - Loudoun County Parkway and Smith Switch Road
            - Nokes Boulevard with Cascade Parkway/Potomac View Road
            - Farmwell Road with Smith Switch Road
            - Chruch Road with Davis Drive and Ruritan Circle
            - Loudoun County Parkway with Russel Branch Parkway

    f. The following mitigation measures will be required under the full build out, Phase III (2025) conditions with the proposed Kincora development:

- *Roadway and Signal Improvements:*
  - Loudoun County Parkway and Smith Switch Road/Gloucester Parkway
  - Farmwell Road and Ashburn Village Boulevard
  - Waxpool Road and Pacific Boulevard
  - Farmwell Road and Smith Switch Road/Waxpool Road
  - Gloucester Parkway and Pacific Boulevard
  - Pacific Boulevard and all proposed site driveways
- *Signal Improvements:*
  - Route 7 with City Center Boulevard
  - Ashburn Village Boulevard with Gloucester Parkway
  - Waxpool Road with Pacific Boulevard

The results of the study have identified that the roadway network planned as part of this project combined with the roadway elements recommended by other private developers and public agencies will result in a roadway network that can accommodate the combination of both the proposed development and the anticipated traffic as part of future non-site related traffic.